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TABVLÆ
SINVVM,
TANGENTIVM
&
SECANTIVM.

Ad Radium 10000000.

Cum usu earumdem in Triangulis Rectilineis.

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AMSTERDAMI,
Apud IOAN. & CORN. BLAEV,
CIϽ IϽ CXXXIX.

BIBLIOTECA NAZ. ROMA VITTORIO EMANUELE

Falsa est Definitio, ut ex tri=
bus angulis datis Catera in=
veniri nequeant. Adde
quod dari possunt duo latera
et unus angulus, adeoque
Tō vel copulative sumen=
[illegible] ni obstaret Tō tribus.

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GEOMETRIÆ TRIANGVLORVM LIBER I.

De magnitudine rectarum linearum quæ circa Circuli peripheriam considerantur.

I.

TRIANGVLORVM Geometria est, quæ ex tribus quibuscunque, vel angulis, vel lateribus, in rectilineo aut Sphærico Triangulo datis, reliquorum laterum angulorumq; dimetiendorum rationem tradit, adminiculo Canonis Triangulorum, ex magnitudine rectarum linearum, quæ circa circuli peripheriam considerantur, compositi.

Suscepta nobis est explicanda Triangulorum Geometria, rectè igitur à definitione ejus auspicamur: omnis enim quæ à ratione suscipitur de aliqua re institutio, debet à definitione proficisci, ut intelligatur id de quo disputatur. Definitio autem præmissa cum à partibus totius doctrinæ sumpta sit, valde clara est & sigillatim deinceps demonstrabitur.

ΠΟΡΙΣΜΑ.

Ejus itaque partes tres sunt. Prima ex primis Geometriæ elementis, rectarum linearum magnitudinem, quæ circa circuli peripheriam considerantur, demonstrat: Altera Canonis Triangulorum σύνταξιν: Postrema, usum ejus in calculo Triangulorum rectilineorum.

 2. Recta-

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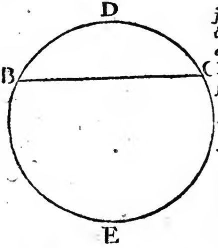
2. Rectarum vero linearum quæ circa circuli peripheriam considerantur, aliæ sunt in circuli peripheria, aliæ extra, aliæ per circuli peripheriam.

Veteres Mathematici cùm solis subtensis in Triangulorum Geometria uterentur, rectarum solummodo magnitudinem quæ in circulo sunt investigabant. Nobis verò cùm plenior, planiorque mensurandi ratio explicanda sit, etiam earum quæ extra & per circuli peripheriam sunt, magnitudo demonstranda est.

De magnitudine rectarum in Circuli peripheria.

3. In circuli peripheria considerantur Subtensa, & Sinus.

4. Subtensa est recta linea in circulo, dirimens eum in duo segmenta; & utrumque pariter subtendens.



Talis est in adjecto schemate recta B C. dirimit enim circulum B D C E in duo segmenta, B D C & B E C: & utrumque pariter subtendit.

5. Sinus, est recta linea in semicirculo, ab arcus termino perpēdicularis.

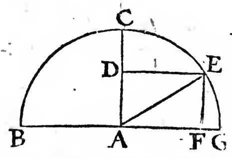
Vox Sinus Arabica est, & proinde barbara; sed cum

cum longo usu approbata sit , & commodior non suppetat , nequaquam repudianda est : faciles enim in verbis nos esse oportet, cùm de rebus convenit.

6. Sinus rectus est aut versus.

Recentiores aliqui Sinum dividunt in primum & secundũ: nam cum ex præmissa Sinus definitione, versus nõ minus perpẽdicularis sit quàm rectus, etiã rectum esse contendunt, & proinde vitiosam distributionem Philosopho ubi partes conveniant. Verùm cum hoc verso Sinui proprium sit, quod recto versus sit, rectus solummodò κατὰ τὶ ; nulla caussa est ab usitata divisione recedendi.

7. Sinus rectus est recta linea in semicirculo, ab arcus termino perpendicularis in diametrum, dividens semicirculum in duo segmenta ; ad quorum utrumque pariter refertur.



Talis est in adjunctâ figurâ recta E F ; *est enim ab* E *arcus termino, perpendicularis in diametrũ* B A F G; *dividitque semicirculũ* B C E G *in duo segmenta,* G E, *&* B C E, *ad quorum utrumque pariter refertur.*

ΠΟΡΙΣΜΑ.

Itaque Sinus rectus, est semissis Subtensæ arcus dupli.

Nam quod Subtensa est in circulo, id Sinus re-

ctus est in semicirculo, quemadmodum definitiones Sinus recti & Subtensæ, inter se collatæ ostendunt.

8. Sinus rectus peripheriæ, & complementi sui æque possunt radio.

Complementum peripheriæ dicimus reliquam peripheriam datæ ad circuli quadrantem. Sit igitur in præmissa figura, recta E F, *sinus rectus peripheriæ* G E *vel* B C E: *& complementi sui* C E *sinus rectus* E D, *vel æqualis illi* A F *per trigesimam quartam primi elementorum. Dico* A F *&* E F, *æquepossе radio* A E. *Nam per penultimam primi Euclidis, in Triangulis rectangulis, quadrata laterum rectum angulum continentium, æqualia sunt lateri rectum angulum subtendenti. Sed* A F E *est Triangulum rectangulum ad* F *per septimam hujus, crura verò rectum ambientia sunt* A F *&* E F: *æquepossunt ergo radio* A E *rectum angulum subtendenti; quod erat demonstrandum.*

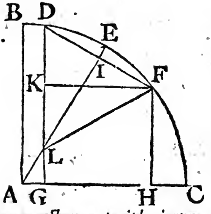
ΠΟΡΙΣΜΑ.

Itaque dato radio cum sinu recto peripheriæ, datur etiam sinus rectus complementi sui: dempto enim sinus noti quadrato ex quadrato radii, relinquitur quadratum sinus complementi; cujus radix est ipse sinus quæsitus.

In exemplo sit radius A E 10, *&* E F 6; *erit* D E 8: *ablato scilicet quadrato* E F 36, *ex quadrato radii* A E 100. *& residui* 64 *quadrato latere* 8 *assumpto.*

9. Differentia Sinuum rectorum peripheriarum duarum, à circuli sextante æquali intervallo remotarum, æquatur Sinui recto peripheriæ

peripheriæ alterutrius, à circuli ſextante intervalli.



Sint in quadrante ABC *peripheria dua* CF *&* C D, *aquali intervallo ab* E *circuli ſextante remota; & harũ recti ſinus* F H *&* D G *: differentia veri ſinuũ* D K. *Dico* D K *differentiam ſinuum rectorum peripheriarum datarum, aquari* D I *vel* F I. *alterutrius peripheria à circuli ſextante intervalli. Triangulum enim* D L F *eſt aquiangulum (nam* D L *latus Trianguli rectanguli* D I L, *aquatur* L F *lateri Trianguli rectanguli* F I L *per quartam primi elementorum: & proinde anguli ad* D *&* F *in Triangulo* D L F *per quintã ejuſdem aquales ſunt) Sed angulus* D L E *eſt partium* 30, *aqualis ſcilicet angulo* B A E *per ſecundam & quintam ſexti elementorum: totus itaque* D L F *eſt partium* 60. *Talium verò etiam eſt angulus ad* D *&* F *ſigillatim per trigeſimam ſecundam primi elementorum. Quare cùm Triangulum* D L F *aquiangulum ſit; etiam aquilaterum eſt per quintam ejuſdem: & proinde latus* D F *aquale lateri* D L; *& ſemiſsis illius* D E *per decimam primi elementorum, aqualis ſemiſsi hujus* D K: *quod erat demonſtrandum.*

ΠΟΡΙΣΜΑ.

Quare, ſi duarum peripheriarum, æqualiter

ter à circuli ſextante remotarum, recti ſinus dentur, etiam diſtantiæ peripheriæ alterutrius à circuli ſextante rectus ſinus innoteſcet; differentia enim ſinuum datorum, eſt ipſe ſinus quæſitus.

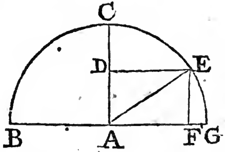
In exemplo eſto peripheria C F *partium* 50, *diſtans ab* E *circuli totius ſextante partibus* 10; *& ejus rectus ſinus* F H 7660: *peripheria vero* C D, *partium* 70, *ſimili intervallo ab* E *remota*; *& ſinus rectus ejus* D G 9396. *Differentia ſinuū* D K 1736, *æqualis eſt ſinui recto arcus* E F *vel* E D, *partium* 10.

Quod ſi rectus ſinus peripheriæ alterutrius, cum ſinu recto diſtantiæ notus ſit, etiam reliquæ peripheriæ rectus ſinus invenietur: ablato enim ſinu recto peripheriæ diſtantiæ, ex ſinu recto peripheriæ ſextante circuli majoris, relinquitur ſinus rectus peripheriæ minoris; adjecto vero eodem ſinu diſtantiæ ad ſinum rectum peripheriæ ſextante circuli minoris, componitur ſinus rectus peripheriæ majoris.

In eodem exemplo auferatur ſinus rectus diſtantiæ F I, *vel æqualis ei* D K 1736, *ex* D G 9396, *ſinu recto peripheriæ* C D, *circuli ſextante majoris*; *relinquitur* K G, *vel æqualis illi* F H *per trigeſimam quartam primi element.* 7660, *ſinus rectus* C F *peripheriæ minoris. Addantur viceverſa in unam ſummam ſinus rectus* D K 1736, *& ſinus rectus* F H, *vel* K G, 7660; *componitur ſinus rectus* D G 9396, *competens peripheriæ* C D, *ſextante circuli majori.*

10. Sinus verſus, eſt recta linea in ſemicirculo,

circulo, ab arcus termino altero, ad sinum rectum perpendicularis.



Talis est recta G F, *est enim perpendicularis ab altero termino peripheriæ* G E, *nempe* G, *in sinum rectum* E F. *Item* B F: *nam & ea perpendicularis est à peripheriæ* B C E, *termino altero* B, *ad* E F *sinum rectum peripheriæ ejusdem.*

11. Sinus peripheriæ versus, & complementi sui rectus æquantur radio.

Sic in figura superiori, recta F G, *sinus versus peripheriæ* G E; *&* A F, *sinus rectus complementi sui æquantur radio* A F G. *Nam per communem sententiam, Totum æquale est omnibus partibus suis simul sumptis.*

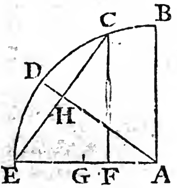
ΠΟΡΙΣΜΑ.

Proinde radio dato, & sinu recto complementi peripheriæ, datur ipsius peripheriæ sinus versus. Dempto enim sinu recto complementi peripheriæ ex radio, relinquitur sinus versus peripheriæ datæ, quadrante circuli minoris: adjecto vero sinu recto excessus peripheriæ super circuli quadrantem ad radium, componitur sinus versus peripheriæ datæ; quadrante circuli majoris.

In exemplo detur radius A G 10, *&* A F 6, *rectus sinus peripheriæ* E C, *complementi* E G *ad circuli*

circuli quadrantem : erit F G 4, *sinus versus peripheriæ* E G, *quadrante circuli minoris. Rursus, sit* C E, *excessus peripheriæ* B C E , *super circuli quadrantem* B C ; *&* *sinus rectus ejusdem* D E *vel* A F 6,*radius* A B *ut supra* 10:*erit* B A F 16, *sinus versus peripheriæ* B C E, *quadrante circuli majoris.*

12. Sinus rectus & versus, æquepossunt sui arcus subtensæ.



Sit in quadrante B C D E, C F *sinus rectus arcus* C E; E F *ejusdem peripheriæ sinus versus : & Subtensa ejusdem* C H E. *Dico,* C F *sinum rectum, &* E F *versum, æquari* C H E, *subtẽsa arcus sui* C D E. *In rectangulis enim triangulis per penultimam primi Elementorum quadrata laterum rectum ambientium, æquantur quadrato lateris recto angulo oppositi : sed Triangulum* C F E,*est rectangulum ad* F *per septimam hujus : Latera verò rectum ambientia sunt sinus* C F *&* E F;*oppositum recto angulo latus est* C E,*subtensa arcus* C D E.*Itaque quadrata sinuum* CF *&* EF, *æquantur quadrato subtensæ* C E : *quod erat demonstrandum.*

ΠΟΡΙΣΜΑ.

Quare cujusvis peripheriæ recto sinu, & verso cognito, invenitur & subtensa ejus; & sinus rectus peripheriæ dimidiæ : quadrati enim

enim recti sinus, & versi peripheriæ aggregati radix, datæ peripheriæ subtensa est; & semissis ejus, est sinus rectus peripheriæ dimidiæ.

In exemplo sit E F 6, *&* C F 8: *erit* C H E *subtensa*, 10; *&* H E, *sinus rectus* D E, *peripheriæ dimidiæ per* πόρισμα *septimæ hujus* 5: *quadratum enim* E F *est* 36, *quadratum* C F 64; *horum aggregatum est* 100, *&* *radix ejus* 10, *pro subtensa* C H E: *Itaque* H E *vel* H C *est talium* 5.

13. Sinus rectus peripheriæ in circuli quadrante, media proportione est ad semiradium, & sinum versum arcus dupli.

Esto in diagrammate præcedenti datus arcus ED, *ad quem duplus sit* E C: *dico* A G *semiradium esse ad* H E *sinum rectum arcus* D E; *ut* H E *ad* E F, *sinum versum arcus dupli* E C. *Triangula enim* A H E, *&* E F C *similia sunt, ob rectos angulos ad* F *&* H *per septimam hujus, communem ad* E. *Itaque latera eosdem angulos continentia per quartam sexti elementorum sunt proportionalia. Quare ut* A E *latus recto appositum, ad latus* C E *recto oppositum; ita* E H *latus minus rectum ambiens, ad* E F *latus minus rectum ambiens. Sed ut* A E *ad* C E; *ita* A G *semiradius ad* HE *semissem subtensæ, per decimam quintam quinti elementorum. Ergo ut* A G *ad* H E; *ita* H E *ad* E F, *quod erat demonstrandum.*

ΠΟΡΙΣΜΑΤΑ *duo.*

Itaque semiradio dato, & cujusvis peripheriæ sinu recto, datur etiam sinus versus

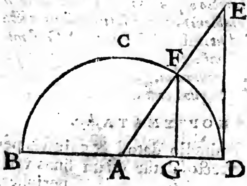
peripheriæ duplæ: Nam ut ſemiradius ſe habet ad ſinum rectum peripheriæ datum; ita ſinus rectus peripheriæ datus, ad ſinum verſum duplæ.

In exemplo ſit A G *ſemiradius* 5, *&* H E 6; *erit* E F 7 *pauló plus. Nam ut* A G 5 *ad* H E 6; *ita* H E 6 *ad* E F 7 *paulò plus, ſinum verſum* C E *peripheriæ duplæ. hinc verò rectos ſinus* A F *&* FC *invenire non eſt difficile, undecima & octava hujus hoc indicantibus.*

Dato vero ſemiradio, & ſinu cujuſcunque peripheriæ verſo, invenitur & ſinus rectus peripheriæ dimidiæ: factum enim à ſemiradio per datæ peripheriæ ſinum verſum, æquatur ſinui recto peripheriæ dimidiæ.

In eodem exemplo, detur A G *ſemiradius* 5; *&* F E *ſinus verſus peripheriæ* C E 7: *erit* H E *ſinus rectus peripheriæ dimidiæ* 6 *ferè. Nam ut* A G 5 *ad* H E: *ita* H E *eſt ad* F E 7. *Factus verò ab* A G 5, *per* F E 7, *ſcilicet* 35, *eſt æqualis facto per ſe, per vigeſimam ſeptimi Euclidis. Quare hujus radix quadrata* 6 *fere*, H E *ſinui recto peripheriæ dimidiæ competit.*

De quantitate rectarum extra circuli peripheriã.



14. Extra circuli peripheriam conſideratur recta peripheriam tangens.

Talis eſt recta D E, *tan-*

tangit enim peripheriam F D.

15. Tangens peripheriæ eſt recta linea, extremo diametri perpendicularis, in radium per arcus terminum continuatum; ipſi arcui & reliquo ad ſemicirculum competens.

Ita in præmiſſa figura, tangens D E *eſt perpendicularis extremo diametri* B A D, *in radium* AF *continuatum per arcus terminum* F : *competens arcui* F D, *& reliquo ad ſemicirculum* B C F.

16. Tangens peripheriæ ſe habet ad radium; ut peripheriæ ſinus rectus ad ſinum rectum complementi.

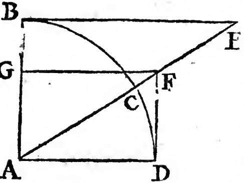
Eſto in præcedenti figura recta E D, *tangens peripheriæ* F D; *& ejuſdem rectus ſinus* F G, *complementi* A G : *radius* A D. *Dico rationem* E D *ad* A D *eſſe, ut* F G *ad* A G. *Triangula enim* A F G, *&* A E D, *ſunt æquiangula, ob rectos angulos ad* D *&* G, *communem ad* A. *Itaque per quartam ſexti elementorum latera habent proportionalia.*

ΠΟΡΙΣΜΑ.

Quare ſinu recto peripheriæ cujuſvis, & complementi cognito, ejuſdem tangens non latebit. Nam ut rectus ſinus complementi peripheriæ ſe habet ad ſinum rectum ipſius peripheriæ: ita radius ad tangentem ejuſdem.

In exemplo ſit A G 6, F G 8, *&* A D 10; *erit* E D 13 *paulo plus. Nam ut* 6 *ad* 8; *ita* 10 *ad* 13 *paulo plus.*

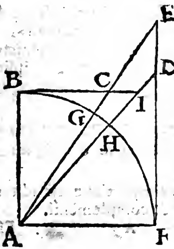
17. Radius media proportione eſt ad tangentes peripheriæ, & complementi.



Esto recta F D, *tangens peripheriæ* DC; *complementi verò* B C, *tangens* E B : *radius* A B, *vel* AD. *Dico* A B, *vel* A D *radium, media proportione esse ad* D F *&* B E, *tangentes peripheriarum* D C *&* B C. *Triangula enim* A D F (*vel* A G F *per trigesimam quartam primi elementorum*) *&* A B E *sunt æquiangula, ob rectos angulos ad* B *&* D (*vel* G) *communem ad* A. *Itaque per quartam Sexti elementorum, ut* G A, *tangens peripheriæ* C D, *ad* G F *radium : ita* A B *radius, ad* B E *tangentem complementi* B C.

ΠΟΡΙΣΜΑ.

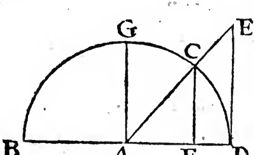
Quare tangentes arcũ complemẽtorũ suorũ tangentibus reciprocè proportionales sunt.



Sint enim in adjuncto schemate arcuum F H *&* F G, *tangentes* F D *&* F E ; *& complementorum* B G *&* B H, *tangentes* B C *&* B I. *Dico rationem* F D *ad* F E *esse, ut* B C *ad* B I. *Nam per vigesimã octavi Euclidis, Similes plani sunt, inter quos unus proportionalis medius intercidit. Sed inter* F D

F D & B I, *item* F E & B C, *unus proportionalis medius intercidit, nempe radius: similes ergo plani sunt. Sed per penultimam definitionem septimi Euclidis similes plani latera habent proportionalia: Quare, ut* F D *ad* F E, *ita* B C *ad* B I; *quod erat demonstrandum.*

De magnitudine rectarum per circuli peripheriam.



18. Per circuli peripheriam consideratur recta peripheriã secans.

Talis est recta A E; *secat enim peripheriam* D C B *in* C.

19. Secans peripheriæ, est recta linea per peripheriæ terminum, in tangentem ducta; peripheriæ sectæ & reliquæ ad semicirculum competens.

Ita in præmissa diagrapha, secans A E *ducta est per terminum peripheriæ* D C *in tangentem* E D: *competitque peripheriæ* C D, & *reliquæ ad semicirculum* B C.

20. Radius media proportione est ad peripheriæ sinum rectum, & secantem complementi.

Esto in figura superiori A F, *sinus rectus peripheriæ* G C; & A E *secans peripheriæ* C D *(complement*

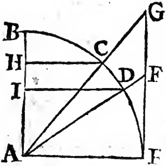
plementi prioris ad circuli quadrantem) dico A F *sinum peripheriæ* G C *esse ad* A C *radium, ut* A D *radius ad* A E *secantem complementi. Triangula enim* A F C, *&* A D E, *sunt æquiangula; ob rectos angulos ad* F *&* D, *communem ad* A. *Itaque per quartam sexti elementorum, ut* A F *ad* A C; *ita* A D *ad* A E: *quod erat demonstrandum.*

ΠΟΡΙΣΜΑΤΑ *duo.*

Itaque ex sinu recto cujusvis peripheriæ, etiam complementi secans datur: ut enim peripheriæ datæ sinus rectus se habet ad radium; ita radius ad secantem complementi.

In exemplo sit A F 5, *&* A D 10: *erit* A E 20. *Nam ut* 5 *ad* 10; *ita* 10 *ad* 20, *secantem* A E.

Et secantes arcuum complementorum rectis sinibus reciprocè proportionales sunt.

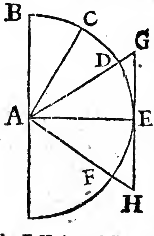


Sint enim in adjunctâ diagraphâ, arcuum E D *&* E C, *secantes* A F *&* A G; *complementorum verò sinus* A I *&* A H: *Dico* A F *esse ad* A G; *ut* A I *ad* A H. *Nam per* 20 *octavi Euclidis: Similes plani sunt inter quos unus proportionalis medius intercidit. Sed inter secantes peripheriæ, & complementorum sinus, radius est medius proportionalis: quare* A F, A I, *item* A G, A H, *similes plani sunt. Sed per penultimam definitionem septimi Euclidis, Similes plani latera habent proportionalia: Ergo, ut*

A F

A F *ad* A G ; *ita* A I *ad* A H ; *quod erat demonstrandum.*

21. Secans arcus æqualis est Tangenti dati, & semissis complementi.



Esto arcus D E , *secans* A G, *tangens* G E : *Complementi vero arcus* B D, *semissis* B C (*vel aqualis ei* E F) *tangens* E H. *Dico secantem* A G , *aqualem esse* E G *tangenti arcus dati, & E H semissis complementi. Angulus enim* G A H, *est aqualis angulo* C A E *ex thesi ; angulus verò* E A H *est aqualis angulo* B A C. *Itaque angulus* E H A, *vel* G H A, *est prioris complementum, per trigesimam secundam primi elementorum : & proinde aqualis angulo* C A E. *Quare cùm in Triangulo* G A H, *anguli ad* A *&* H *aquentur ; manifestum est latera* G A *&* G H *per sextam primi elementorum etiam aquari : quod erat demonstrandum.*

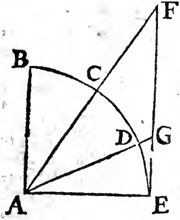
ΠΟΡΙΣΜΑ.

Quare arcus tangente,& complementi semissis simul additis, componitur dati arcus secans.

Adjiciatur enim E G, *tangens arcus* E D , *ad* E F *complementi semissis tangentem* E H ; *componetur* H G, *& aqualis ei* A G *secans peripheria* D E.

22. Secans arcus, circuli quadrantis semisse

miſſe minoris, cum tangente ejuſdem, æqualis eſt tangenti peripheriæ datæ & ſemiſſis complementi.



Eſto peripheria D E, *ſecans* A G; *tangens* E G: *complementi* B D, *ſemiſsis* DC: *tangens vero arcus* C D E, *recta* E G F. *Dico rectā* A G, *cum recta* G E, *æquari rectæ* FE. *Angulus enim* A F E, *æqualis eſt angulo* B A C (*nam ut* B A C *angulus complementū eſt anguli* F A E : *ita etiam* A F E) *Sed huic æqualis eſt* F A G *ex theſi : ergo anguli* A F G *&* G A F *per ſextam primi elementorum æquantur. Et proinde recta* A G, *æqualis rectæ* F G ; *& rectæ* A G, G E *ſimul, æquales rectæ* F G E : *quod erat demonſtrandum.*

ΠΟΡΙΣΜΑ.

Itaque peripheriæ datæ ſecans, & tangens ſimul additæ, componunt tangentem peripheriæ, ſemiſſis complementi auctæ.

Nam ſecans A G *& tangens* G E, *æquantur* FE *tangenti peripheriæ* E D, *aucta ſemiſſe complementi* C D. *Quare adjecta* E G *ad* A G, *componitur* F E *tangens peripheriæ* C E.

Atque ita rectarum quæ in circuli peripheria, extra, & per circuli peripheriā conſiderantur, magnitudo demonſtrata eſt, reliquus eſt doctrinā hujus uſus ſequenti libro indicandus.

GEO-

GEOMETRIÆ TRIANGVLORVM

LIBER II.

De Canonis Triangulorum Syntaxi.

1. Ex superioris doctrinę fundamentis, Canonem Triangulorum componere non est difficile, certis hypothesibus ad hoc assumptis.

Geometriæ Triangulorum pars secunda nobis posita fuit in Syntaxi Canonis Triangulorum, ea igitur hoc libro demonstranda est.

2. Canon Triangulorum est, qui in assumpta circuli, & dimetientis mensura, omnium circuli quadrantis partium, scrupulorumque primorum, Sinus, Tangentes, & Secantes continet.

Veteres (ut supra dictum) solis subtensis utebantur, & proinde Triangulorum canonem appellabant eum, qui omnium semicirculi partium subtensas continebat. Iam vero cùm præter subtensas & sinus, etiam tangentes, & secantes, circa circulum considerentur, sunt & ea in Canonem Triangulorum referenda.

3. Mensura circuli assumitur partium ccclx, pars lx scrupula prima, unum scrupulum primum lx secunda potest; & ita deinceps.

Hæc circuli divisio est Ptolemai, & recentiorum Mathematicorum; valde idonea ad numerationem: inter minores enim numeros nullus adeò multiplica-

par-

partes habet, Vnciam, sextantē, quadrantem, trientem, quincuncem, semissem, septuncem, bessem, dodrantem, dextantem, deuncem, & assem. Retinenda igitur est, & ad eam aliæ proportionaliter accommodandæ sunt.

4. Dimetiens circuli statuitur particularum 20000000.

Ptolemæus diametrū assumit particularū 120: Arzahel 300. Neoterici 20000000 particularum eam statuunt: quæ mensura retinenda est; nam cùm plurium particularum sit, plenius diameter secatur, & proinde a multis subdivisionibus logista liberatur.

5. Qualium dimetiens statuitur particularum 20000000, talium latus sexanguli circulo inscripti est 10000000.

Nam per 15 quarti elementorum latus sexanguli circulo inscripti est æquale radio. Radius autem diametri semissis est, quare dimidiata diametri mensura 200 0 00, datur radius, & æquale ei Sexanguli latus, particularum 10000000.

6. Trianguli, 17320508 ferè.

Nam per 12 decimitertii Euclidis, Latus Trianguli circulo inscripti potentiâ est triplum radii: Radius autem est particularum 10000000; *ergo potentia ejus triplicata est particularum* 300000000000000, *& latus ejus* 17320508 *ferè.*

7. Quadranguli 14142136.

Per sextam enim quarti elementorum, Recta quadrantem circuli subtendens, est latus quadranguli

guli circulo inscripti : potest autem ea per penultimam primi elementorum duplum radii. Itaque potentia quadranguli est 20000000000000 : *&* *ejus latus* 14142136.

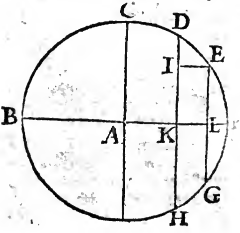
8. Decanguli 6180430.

Nam per nonam decimitertii Euclidis, decanguli latus, est segmentum minus recta linea extrema & media ratione secta, latus sexanguli & decanguli simul mensurantis. Itaque per undecimam secundi elementorum ablato semiradio 5000000, *ex quadrato latere radii & semiradii aggregato* 11180340 : *relinquitur decanguli latus* 6180430.

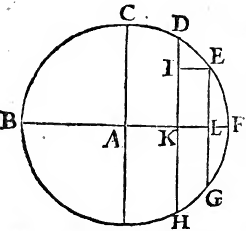
9. Quinquanguli 11755704 ferè.

Nam per decimam decimitertii Euclidis, Latus quinquanguli in circulum inscripti, potest latus sexanguli & decanguli. Sed sexanguli latus est particularum 10000000, *per quintam hujus: decanguli* 6180430 *per præmissam. Itaque per penultimam primi elementorum Quinquanguli latus est* 11755704 *ferè.*

10. Quindecanguli 4158234 ferè.



Nam per decimam-sextam quarti elementorum, recta inscripta inter basim Trianguli & Quinquanguli, ab eodē puncto in circulum ducti est



est latus Quindecanguli. Atqui talis est DE *in adjuncta figura, inscripta inter basim Trianguli* DH, *& Quinquanguli* EG, *à* B *eodem puncto in circulum ducti: est ergo latus Quindecanguli. Hujus porro magnitudo investigatur hoc modo: datur* DKH *latus Trianguli per 6 hujus* 17320508 *ferè, &* ELG *Quinquanguli latus per præmissum* 11755704 *ferè. Itaque per 7 primi Triangulorum* DK *est* 8660254 : EL 5877852, *sinus recti peripheriarum* FD *&* FE: *& differentia eorum* DL 2782402. *Per 8 vero ejusdem* AK *est* 5000000 ; AL 8090170 *sinus recti complementorum* CD *&* CE: *& differentia eorum* KL *vel* IE 3090170. *Quare cùm in Triangulo* DIE *rectangulo ad* I, *detur latus* DI 2782402, *&* IE 3090170 : *per penultimam primi elementorum latus* DE *Quindecanguli est particularũ* 4158234 *fere; quod erat demonstrandum.*

11. Si Trianguli, Quadranguli, Quinquanguli, Sexanguli, Decanguli, & tandem ipsius Quindecanguli laterum semisses assumantur, ut angulorum dimidiorum sinus: & ex his complementorum singulorum, semissiumq; sinus continuè investigentur; & contra, totus sinuum Canon hac inductione componitur.

Sint

Sint inscripta laterum supra inventa.

Trianguli	120.	17320508	*per*	6 *hujus.*
Quadranguli	90.	14142196	*per*	7
Quinquanguli	72.	11755704	*per*	9
Sexanguli,	60.	10000000	*per*	5
Decanguli, &	36.	6180340	*per*	8
Quindecanguli	24.	4158234	*per*	10

Assumanturq; horũ semisses, ut angulorum dimidiorum sinus per septimã primi Triangulorum.

Partium	60	8660254.
	45	7071068.
	36	5877852.
	30	5000000.
	18	3090170.
	12	2079117.

Dico ex harum peripheriarum sinibus datis, reliquarum quadrantis peripheriarum sinus datum iri: Si continuè harum complementorum, semissiumque sinus determinentur, & contrà. Elementum veritatis suæ causam aliam non desiderat, quàm inductionem ab experientiâ factam, quæ in hoc genere sufficit, cùm numeri sensibus subjecti sint. Assumatur igitur exempli gratiâ arcus partium 12. ejusque sinus 2079117; adhibeaturque præsentis elementi methodus, hinc sequentium peripheriarum sinus dabuntur.

Continuæ semisses ex periph. partium 12 deductæ.	& earum sinus per 12 vel 13 primi hujus.
6	1045285.
3	523360.
1 30	261769.
0 45	130896.

accho Geometrica. 9. 45
19. 30.

51 — 79
25. 30 — 69. 30. 32. 15.
12. 45. — 77. 15.

harum

harumque complementa.	*& sinus per 8 primi hujus.*
84	9945219.
87	9986295.
88 30	9996573.
89 15	9999143.
& horum semisses,	*& sinus per 12 vel 13 primi hujus.*
42	6691306.
21	3583679.
10 30	1822355.
5 15	915016.
43 30	6883546.
21 45	3705574.
44 15	6977905.
harúmque complementa,	*& sinus per 8 primi hujus.*
48	7431448.
69	9339804.
79 30	9832549.
84 45	9958049.
46 30	7253744.
68 15	9288096.
45 45	7160319.
rursusque horum semisses,	*& sinus per 12 vel 13 primi hujus.*
24	4067366.
34 30	5664062.
17 15	2965416.
39 45	6394390.
23 15	3947439.
& complementa,	*& sinus per 8 primi hujus.*

66

66	9135455.
55 30	8241262.
72 45	9550199.
50 15	7688418.
66 45	9187912.
itemque semisses horum,	*& sinus per* 12 *vel* 13 *primi hujus.*
33	5446390.
16 30	2840153.
8 15	1434926.
27 45	4656145.
& complementa,	*& sinus per* 8 *primi hujus.*
57	8386706.
73 30	9588197.
81 45	9896514.
62 15	8849876.
horumque semisses,	*& sinus per* 12 *vel* 13 *primi hujus.*
28 30	4771588.
14 15	2461533.
36 45	5983246.
& complementa,	*& sinus per* 8 *primi hujus.*
61 30	8788111.
75 45	9692309.
53 15	8012538.
& semissis peripheriæ 61,30,	*& sinus ejus per* 12 *vel* 13 *primi hujus.*
30 45	5112931.
hujusque complementum,	*& sinus per* 8 *primi hujus.*
59 15	8594064.

His verò ſinibus inventis aſſumendum quoque eſt complementum arcus partium 12, *nempe* 78; *&* *inde ſimili inductione ſemiſſium peripheriarum, complementorumque ſinus continuè inveſtigandi ſunt. Qua ratio ſi non modò in hujus peripheriæ ſinu, ſed & reliquis ſupra inventis ſervetur, tandem maxima pars Canonis abſolvetur.*

Cæterum cum ad Canonem complendum etiam prioris ſcrupuli & ſequentium aliquot ſinus deſiderentur, ſupereſt ut quomodo ex hujus Theorematis methodo, & ii inveſtigandi ſint, paucis oſtendamus. Aſſumatur igitur ſinus partium 0, 45 min. *ſupra inventus* 130896: *adhibitaque inductione ſuperiori hujus ſemiſſes continuè inveſtigentur per* 12 *vel* 13 *primi Triangul. Ita ſequentium peripheriarum ſinus invenientur.*

22 min.	30 ſec.	65449
11	15	32724 & med.

Porro cùm ex his ſinibus appareat eò uſque perveniſſe nos, ubi recta & curva differentia ſenſum prorſus evadit, tanquam una linea factarum, nullus error committetur, ſi æqua ratione reliquis peripheriis 22 min. 30 ſec. *minoribus ſinus rectus ejus* 65449 *accommodetur. Ita enim ſinus ſcrupuli unius dabitur* 2909 *ferè, & ſcrupulorum* 15 min. 43632; *& ita deinceps, Ex his verò ſinibus ſinuum Canon perficietur. Si duplorum arcuum & complementorum ſinus per decimam tertiam primi Triangulorum inveſtigentur: & ex iis rurſus ſemiſſium complementorumque continuè; dum totus ſinuum Canon abſolutus fuerit.*

Hæc eſt ſinuum Canonis condendi ratio, quæ cùm ex ſuperioris libri elementis deducta ſit, ampliori demonſtratione non eſt opus.

12. Ductis

12. Ductis vero singulis totius quadrantis sinibus in radium, planisque sigillatim in sinus complementorum divisis, dantur singulæ totius circuli quadrantis peripheriarum tangentes, totusque tangentium Canon hac methodo completur.

Hujus elementi ratio ex decimasexta primi hujus manifesta est. Nam per eandem Tangens peripheriæ se habet ad radium; ut peripheriæ sinus rectus ad sinum complementi. Itaque cùm sinuum Canon ex superiori doctrina compositus sit, componetur etiam tangentium Canon: multiplicatis singulis totius quadrantis sinibus in radium, planisque horum sigillatim in complementorum suorum sinus divisis. Exempli gratia, datur sinus partium 30, 5000000, *&* *complementi sui* 8660254: *ergo tangens partium* 30 *erit* 5773502. *Nam ut* 8660254 *ad* 5000000; *ita* 10000000 *se habet ad* 5773502.

13. Secantium Canon componitur, radii quadrato in singulos totius circuli quadrantis sinus diviso, initio à sinuum Canonis fine facto.

Nam per vigesimam primi hujus, Radius media proportione est ad peripheriæ sinum rectum, & secantem complementi. Itaque assumptis singulis totius quadrantis sinibus à fine Canonis, divisisque iis in radii quadratum; dantur totius quadrantis secantes: & proinde earum Canon hac viâ completur. In exemplo superiori, datur partium 30 *sinus rectus* 5000000, *&* *quadratum radii* 100000000000000 : *ergo secans partium* 60 *as-*

ſumpta ſcilicet peripheria complementi eſt 20000000. *Nam ut* 5000000 *ad* 10000000; *ita* 10000000 *ad* 20000000.

Atque hæc quidem methodus eſt Conſtructionis Canonis Sinuum, Tangentium & Secantium, in quâ tamen ſpontè à nobis omiſſa ſunt compendia ſuperioris libri Theorematibus 9, 21 & 22 *demonſtrata. Nam cum integer Triangulorum Canon ad manum eſſet, Sinuum quidem a præſtantiſsimo Mathematico Ioanne Regiomontano, Tangentium ab Eraſmo Reinholdo, Secantium verò ab Ioachimo Rhetico compoſitus, latius iſta perſequi ſupervacuum duximus. Sufficit enim demonſtraſſe ex quibus fundamentis Canonis Triangul. constructio deducta, & qua methodo à præſtantiſsimis artificibus completus ſit. Reliquus eſt Canonis uſus quem ſequenti Theoremate proponimus.*

14. Canon Triangulorum in fronte partes circuli quadrantis, in ſiniſtro margine, partium ſcrupula prima, in communi interſectione, partis ſcrupulique ſinus, tangentes vel ſecantes, cum differentia 60 ſcrupulis ſecundis competente complectitur.

Canonis frons, vulgo tabulæ caput, ſuprema pars, aut tranſverſalis margo appellatur: continetque totius circuli quadrantis partes. Siniſter margo eſt in quo partium ſcrupula prima deſcripta ſunt. Communis interſectio, vel angulus eſt, in quo deſcendens & tranſverſalis ordo ſe mutuò interſecant. Differentia verò 60 *ſecundis ſcrupulis competens, eſt exceſſus minoris ſinus, tangentis vel ſecantis, ſuper proximè majorem.*

NO-

Itaque assumptæ partis, & primi scrupuli sinus, tangens, vel secans in Canone est, quæ in angulo communi partis assumptæ, & scrupuli primi continetur: & contra.

In exemplo, sinus partium 23 & scrupulorum primorum 28 est 3982155: Talis enim in angulo communi sinuum canonis exhibetur. Viceversa 3982155 sinus est partium 2328: Inventus enim sinus in Canone, partes 23 in fronte, scrupula vero prima 28 ostendit.

Parti vero & scrupulis primis, etiam secundis adhærentibus pars proportionalis differentiæ (quæ LX scrupulis secundis competit) sinui, tangenti, vel secanti proximè minori addita, assumptæ peripheriæ sinum tangentem, vel secantem componit; & contra.

Exempli gratiâ, sinus partium 23, scrup. pr. 28, scrup. sec. 30, est 3983489. Nam proximè minor sinus in Canone invenitur, 3982155; & differentia scrupulis 60 secundis competens est 2668: ergo proportionalis pars 30 secundis tribuenda est 1334 (Nam per auream regulam, ut 60 ad 2668; ita 30 ad 1334) hac autem sinui minori 3982155 adjecta componit 3983489, sinum peripheriæ 23-28-30 quæsitum. Viceversa peripheria sinus 3983489, ex sinuum Canone invenitur partium 23-28-30. Nam sinus proximè minor 3982155, competit arcui partium 23-28.

BIBLIOTECA ... ROMA

Differentia verò hujus sinus & præcedentis dati est 1334: cui congruunt 30 scrupula secunda, (Nam ut 2668 differentia sexaginta scrupulis secundis competens, ad scrupula 60 secunda: ita 1334 ad 30 scrupula secunda) Itaque his ad arcum 23-28 proximè minorem adjectis, componitur peripheria partium 23-28-30, sinui proposito 3983489, correspondens. Et hic quidem Canonis usus. Iam ipsum Canonem subjicimus.

CANON

SINUUM, TANGENTIUM ET SECANTIUM.

Ad Radium

10000000.

0	*Sinus*	*Tangens*	*Secans*
0	0	0	100000.00
1	29.09	29.09	100000.00
2	58.18	58.18	100000.02
3	87.27	87.27	100000.04
4	116.36	116.36	100000.07
5	145.44	145.44	100000.11
6	174.53	174.53	100000.16
7	203.62	203.62	100000.21
8	232.71	232.71	100000.27
9	261.80	261.80	100000.34
10	290.89	290.89	100000.42
11	319.98	319.98	100000.51
12	349.06	349.07	100000.61
13	378.15	378.16	100000.72
14	407.24	407.25	100000.83
15	436.33	436.33	100000.95
16	465.42	465.42	100001.08
17	494.51	494.51	100001.22
18	523.60	523.60	100001.37
19	552.68	552.69	100001.53
20	581.77	581.78	100001.70
21	610.86	610.87	100001.87
22	639.95	639.96	100002.05
23	669.04	669.05	100002.24
24	698.13	698.14	100002.44
25	727.21	727.23	100002.65
26	756.30	756.32	100002.86
27	785.39	785.41	100003.08
28	814.48	814.50	100003.31
29	843.57	843.60	100003.55
30	872.65	872.69	100003.80

	Sinus	Tangens	Secans
60	10000.00	infinitum.	infinitum.
59	99999.99	343774667.38	343774681.9
58	99999.98	171887319.15	171887348.2
57	99999.96	114591529.94	114591573.5
56	99999.93	85943630.48	85943688.6
55	99999.89	68754886.93	68754959.6
54	99999.84	57295721.34	57295808.6
53	99999.79	49110600.28	49110702.0
52	99999.73	42971757.06	42971873.4
51	99999.66	38197099.08	38197229.9
50	99999.58	34377370.74	34377516.1
49	99999.49	31252136.71	31252296.7
48	99999.39	28647773.40	28647947.9
47	99999.28	26444079.88	26444268.9
46	99999.17	24555198.33	24555401.9
45	99999.05	22918166.36	22918384.5
44	99998.92	21485762.18	21485994.8
43	99998.78	20221874.99	20222122.2
42	99998.63	19098418.64	19098680.44
41	99998.47	18093219.83	18093496.17
40	99998.30	17188539.93	17188830.82
39	99998.13	16370019.10	16370324.53
38	99997.95	15625908.37	15626228.34
37	99997.76	14946502.08	14946836.60
36	99997.56	14323712.17	14324061.23
35	99997.35	13750744.68	13751108.29
34	99997.13	13221850.86	13222229.02
33	99996.91	12732133.65	12732526.35
32	99996.68	12277395.54	12277802.79
31	99996.44	11854018.02	11854439.81
30	99996.19	11458865.01	11459301.35

o	*Sinus*	*Tangens*	*Secans*
30	872.65	872.69	100003.80
31	901.74	901.78	100004.06
32	930.83	930.87	100004.33
33	959.92	959.96	100004.61
34	989.00	989.05	100004.89
35	1018.09	1018.14	100005.18
36	1047.18	1047.24	100005.48
37	1076.27	1076.33	100005.79
38	1105.35	1105.42	100006.11
39	1134.44	1134.51	100006.44
40	1163.53	1163.61	100006.77
41	1192.61	1192.70	100007.11
42	1221.70	1221.79	100007.46
43	1250.79	1250.88	100007.82
44	1279.87	1279.98	100008.19
45	1308.96	1309.07	100008.57
46	1338.05	1338.17	100008.96
47	1367.13	1367.26	100009.35
48	1396.22	1396.35	100009.75
49	1425.30	1425.45	100010.16
50	1454.39	1454.54	100010.58
51	1483.48	1483.64	100011.01
52	1512.56	1512.73	100011.45
53	1541.65	1541.83	100011.89
54	1570.73	1570.93	100012.34
55	1599.82	1600.02	100012.80
56	1628.90	1629.12	100013.27
57	1657.99	1658.21	100013.75
58	1687.07	1687.31	100014.24
59	1716.16	1716.41	100014.73
60	1745.24	1745.51	100015.23

	Sinus	Tangens	Secans
30	99996.19	11458865.01	11459391.35
29	99995.93	11089205.13	11089656.01
28	99995.66	10742648.38	10743113.80
27	99995.39	10417094.48	10417574.45
26	99995.11	10110690.24	10111184.75
25	99994.82	9821794.26	9822303.32
24	99994.52	9548947.52	9549471.12
23	99994.21	9290848.72	9291380.87
22	99993.89	9046333.57	9046886.26
21	99993.56	8814357.15	8814924.39
20	99993.23	8593979.07	8594560.86
19	99992.89	8384350.67	8384947.00
18	99992.54	8184704.11	8185314.98
17	99992.18	7994342.99	7994968.41
16	99991.81	7812634.20	7813274.16
15	99991.43	7639000.93	7639655.44
14	99991.04	7472916.51	7473585.56
13	99990.65	7313899.10	7314582.70
12	99990.25	7161507.01	7162205.15
11	99989.84	7015334.61	7016047.35
10	99989.42	6875008.72	6875735.95
9	99988.99	6740185.43	6740927.20
8	99988.55	6610547.27	6611303.59
7	99988.11	6485800.75	6486571.62
6	99987.66	6365674.12	6366459.53
5	99987.20	6249915.37	6250715.33
4	99986.73	6138290.52	6139105.02
3	99986.25	6030581.99	6031411.04
2	99985.76	5926587.21	5927430.81
1	99985.27	5826117.35	5826975.49
0	99984.77	5728996.16	5729868.85

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1	*Sinus*	*Tangens*	*Secans*
0	1745.24	1745.51	100015.23
1	1774.32	1774.60	100015.74
2	1803.41	1803.70	100016.26
3	1832.49	1832.80	100016.79
4	1861.58	1861.90	100017.33
5	1890.66	1891.00	100017.88
6	1919.74	1920.10	100018.43
7	1948.83	1949.20	100018.99
8	1977.91	1978.30	100019.56
9	2006.99	2007.40	100020.14
10	2036.08	2036.50	100020.73
11	2065.16	2065.60	100021.33
12	2094.24	2094.70	100021.94
13	2123.32	2123.80	100022.55
14	2152.41	2152.91	100023.17
15	2181.49	2182.01	100023.80
16	2210.57	2211.11	100024.44
17	2239.65	2240.21	100025.09
18	2268.73	2269.32	100025.75
19	2297.81	2298.42	100026.41
20	2326.90	2327.53	100027.08
21	2355.98	2356.63	100027.76
22	2385.06	2385.74	100028.45
23	2414.14	2414.84	100029.15
24	2443.22	2443.95	100029.86
25	2472.30	2473.05	100030.58
26	2501.38	2502.16	100031.30
27	2530.46	2531.27	100032.03
28	2559.54	2560.38	100032.77
29	2588.62	2589.48	100033.52
30	2617.69	2618.59	100034.28

	Sinus	Tangens	Secans
60	99984.77	5728996.16	5729868.85
59	99984.26	5635058.96	5635946.19
58	99983.74	5544151.67	5545053.45
57	99983.21	5456130.03	5457046.35
56	99982.67	5370858.75	5371789.62
55	99982.12	5288210.91	5289156.37
54	99981.57	5208067.26	5209027.22
53	99981.01	5130315.66	5131290.17
52	99980.44	5054850.59	5055839.65
51	99979.86	4981572.64	4982576.23
50	99979.27	4910388.06	4911406.20
49	99978.67	4841208.41	4842241.10
48	99978.06	4773950.14	4774997.38
47	99977.45	4708534.30	4709596.08
46	99976.83	4644886.20	4645962.53
45	99976.20	4582935.12	4584025.99
44	99975.56	4522614.07	4523719.49
43	99974.91	4463859.56	4464979.52
42	99974.25	4406611.32	4407745.83
41	99973.59	4350812.16	4351961.22
40	99972.92	4296407.73	4297571.34
39	99972.24	4243346.39	4244524.54
38	99971.55	4191578.99	4192771.68
37	99970.85	4141058.76	4142266.00
36	99970.14	4091741.16	4092962.95
35	99969.43	4043583.75	4044820.09
34	99968.71	3996546.05	3997796.94
33	99967.98	3950589.46	3951854.89
32	99967.24	3905677.11	3906957.09
31	99966.49	3861773.81	3863068.34
30	99965.73	3818845.93	3820155.00

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I	*Sinus*	*Tangens*	*Secans*
30	2617.69	2618.59	100034.28
31	2646.77	2647.70	100035.05
32	2675.85	2676.81	100035.82
33	2704.93	2705.92	100036.60
34	2734.01	2735.03	100037.39
35	2763.09	2764.14	100038.19
36	2792.16	2793.25	100039.00
37	2821.24	2822.36	100039.82
38	2850.32	2851.48	100040.65
39	2879.40	2880.59	100041.48
40	2908.47	2909.70	100042.32
41	2937.55	2938.82	100043.17
42	2966.62	2967.93	100044.03
43	2995.70	2997.05	100044.90
44	3024.78	3026.16	100045.78
45	3053.85	3055.28	100046.67
46	3082.93	3084.39	100047.56
47	3112.00	3113.51	100048.46
48	3141.08	3142.63	100049.37
49	3170.15	3171.74	100050.29
50	3199.22	3200.86	100051.22
51	3228.30	3229.98	100052.15
52	3257.37	3259.10	100053.09
53	3286.44	3288.22	100054.05
54	3315.52	3317.34	100055.01
55	3344.59	3346.46	100055.98
56	3373.66	3375.58	100056.96
57	3402.73	3404.71	100057.95
58	3431.81	3433.83	100058.94
59	3460.88	3462.95	100059.94
60	3489.95	3492.08	100060.95

	Sinus	Tangens	Secans
30	99965.73	3818845.93	3820155.00
29	99964.96	3776861.30	3778184.92
28	99964.19	3735789.17	3737127.34
27	99963.41	3695600.11	3696952.82
26	99962.62	3656265.92	3657633.18
25	99961.82	3617759.62	3619141.43
24	99961.01	3580055.33	3581451.68
23	99960.19	3543128.25	3544539.15
22	99959.36	3506954.58	3508380.03
21	99958.53	3471511.50	3472951.50
20	99957.69	3436777.09	3438231.63
19	99956.84	3402730.29	3404199.39
18	99955.98	3369350.89	3370834.53
17	99955.11	3336619.45	3338117.63
16	99954.24	3304517.27	3306030.00
15	99953.36	3273026.37	3274553.65
14	99952.47	3242129.46	3243671.29
13	99951.57	3211809.88	3213366.26
12	99950.66	3182051.60	3183622.52
11	99949.74	3152839.16	3154424.63
10	99948.81	3124157.67	3125757.70
9	99947.88	3095992.80	3097607.37
8	99946.94	3068330.70	3069959.82
7	99945.99	3041158.02	3042801.69
6	99945.03	3014461.89	3016120.10
5	99944.06	2988229.86	2989902.63
4	99943.08	2962449.95	2964137.26
3	99942.09	2937110.55	2938812.41
2	99941.09	2912200.47	2913916.88
1	99940.09	2887708.88	2889439.84
0	99939.08	2863625.33	2865370.83

2	*Sinus*	*Tangens*	*Secans*
0	3489.95	3492.08	100060.95
1	3519.02	3521.20	100061.97
2	3548.09	3550.33	100063.00
3	3577.16	3579.45	100064.04
4	3606.23	3608.58	100065.09
5	3635.30	3637.71	100066.15
6	3664.37	3666.83	100067.21
7	3693.44	3695.96	100068.28
8	3722.51	3725.09	100069.36
9	3751.58	3754.22	100070.45
10	3780.65	3783.35	100071.55
11	3809.71	3812.48	100072.66
12	3838.78	3841.61	100073.77
13	3867.85	3870.74	100074.89
14	3896.91	3899.88	100076.02
15	3925.98	3929.01	100077.16
16	3955.05	3958.14	100078.31
17	3984.11	3987.28	100079.47
18	4013.18	4016.41	100080.63
19	4042.24	4045.55	100081.80
20	4071.31	4074.69	100082.98
21	4100.37	4103.83	100084.17
22	4129.44	4132.96	100085.37
23	4158.50	4162.10	100086.58
24	4187.57	4191.24	100087.80
25	4216.63	4220.38	100089.02
26	4245.69	4249.52	100090.25
27	4274.75	4278.66	100091.49
28	4303.82	4307.81	100092.74
29	4332.88	4336.95	100094.00
30	4361.94	4366.09	100095.27

	Sinus	Tangens	Secans
60	99939.08	2863625.33	2865370.83
59	99938.06	2839939.69	2841699.74
58	99937.03	2816642.18	2818416.78
57	99935.99	2793723.33	2795512.48
56	99934.95	2771173.99	2772977.69
55	99933.90	2748985.28	2750803.53
54	99932.84	2727148.61	2728981.41
53	99931.77	2705655.68	2707503.03
52	99930.69	2684498.43	2686360.33
51	99929.60	2663669.04	2665545.49
50	99928.51	2643159.96	2645050.96
49	99927.40	2622963.84	2624869.39
48	99926.29	2603073.58	2604993.68
47	99925.17	2583482.27	2585416.92
46	99924.04	2564183.23	2566132.43
45	99922.90	2545169.96	2547133.71
44	99921.75	2526436.15	2528414.45
43	99920.60	2507975.68	2509968.53
42	99919.44	2489782.62	2491790.02
41	99918.27	2471851.19	2473873.14
40	99917.09	2454175.78	2456212.28
39	99915.90	2436750.95	2438802.00
38	99914.70	2419571.40	2421637.00
37	99913.49	2402631.99	2404712.14
36	99912.28	2385927.72	2388022.42
35	99911.06	2369453.72	2371562.97
34	99909.83	2353205.25	2355329.05
33	99908.59	2337177.72	2339316.07
32	99907.34	2321366.65	2323519.55
31	99906.08	2305767.67	2307935.13
30	99904.82	2290376.55	2292558.56

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2	*Sinus*	*Tangens*	*Secans*
30	4361.94	4366.09	100095.27
31	4391.00	4395.24	100096.55
32	4420.06	4424.38	100097.83
33	4449.12	4453.53	100099.12
34	4478.18	4482.68	100100.42
35	4507.24	4511.82	100101.73
36	4536.30	4540.97	100103.05
37	4565.36	4570.12	100104.38
38	4594.42	4599.27	100105.71
39	4623.47	4628.42	100107.05
40	4652.53	4657.57	100108.40
41	4681.59	4686.73	100109.76
42	4710.64	4715.88	100111.13
43	4739.70	4745.03	100112.51
44	4768.76	4774.19	100113.90
45	4797.81	4803.34	100115.30
46	4826.87	4832.50	100116.70
47	4855.92	4861.66	100118.11
48	4884.98	4890.82	100119.53
49	4914.03	4919.97	100120.96
50	4943.08	4949.13	100122.40
51	4972.14	4978.29	100123.85
52	5001.19	5007.46	100125.30
53	5030.24	5036.62	100126.76
54	5059.29	5065.78	100128.23
55	5088.35	5094.95	100129.71
56	5117.40	5124.11	100131.20
57	5146.45	5153.28	100132.70
58	5175.50	5182.44	100134.20
59	5204.55	5211.61	100135.71
60	5233.60	5240.78	100137.23

	Sinus	Tangens	Secans
30	99904.82	2290376.55	2292558.56
29	99903.55	2275189.16	2277385.72
28	99902.27	2260201.48	2262412.59
27	99900.98	2245409 59	2247635.25
26	99899.68	2230809.67	2233049.89
25	99898.37	2216398.02	2218652.78
24	99897.05	2202171.00	2204440.32
23	99895.73	2188125.10	2190408.97
22	99894.40	2174256.87	2176555.29
21	99893.06	2160562.96	2162875.93
20	99891.71	2147040.10	2149367.63
19	99890.35	2133685.11	2136027.19
18	99888.98	2120494.88	2122851.51
17	99887.61	2107466.37	2109837.55
16	99886.23	2094596.63	2096982.36
15	99884.84	2081882.76	2084283.05
14	99883.44	2069321.96	2071736.80
13	99882.03	2056911.47	2059340.86
12	99880.61	2044648.61	2047092.55
11	99879.18	2032530.75	2034989.25
10	99877.75	2020555.35	2023028.40
9	99876.31	2008719.89	2011207.50
8	99874.86	1997021.95	1999524.11
7	99873.40	1985459.12	1987975.84
6	99871.93	1974029.10	1976560.36
5	99870.45	1962729.59	1965275.41
4	99868.97	1951558.37	1954118.74
3	99867.48	1940513.27	1943088.20
2	99865.98	1929592.17	1932181.65
1	99864.47	1918792.98	1921397.01
0	99862.95	1908113.67	1910732.26

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3	*Sinus*	*Tangens*	*Secans*
0	5233.60	5240.78	100137.23
1	5262.64	5269.95	100138.76
2	5291.69	5299.12	100140.30
3	5320.74	5328.29	100141.85
4	5349.79	5357.46	100143.41
5	5378.83	5386.63	100144.98
6	5407.88	5415.81	100146.55
7	5436.93	5444.98	100148.13
8	5465.97	5474.16	100149.72
9	5495.02	5503.33	100151.32
10	5524.06	5532.51	100152.93
11	5553.11	5561.69	100154.55
12	5582.15	5590.87	100156.17
13	5611.19	5620.05	100157.80
14	5640.24	5649.23	100159.44
15	5669.28	5678.41	100161.09
16	5698.32	5707.59	100162.75
17	5727.36	5736.78	100164.42
18	5756.40	5765.96	100166.10
19	5785.44	5795.15	100167.78
20	5814.48	5824.34	100169.47
21	5843.52	5853.52	100171.17
22	5872.56	5882.71	100172.88
23	5901.60	5911.90	100174.60
24	5930.64	5941.09	100176.33
25	5959.67	5970.29	100178.07
26	5988.71	5999.48	100179.81
27	6017.75	6028.67	100181.56
28	6046.78	6057.87	100183.32
29	6075.82	6087.06	100185.09
30	6104.85	6116.26	100186.87

	Sinus	Tangens	Secans
60	99862.95	1908113.67	1910732.26
59	99861.42	1897552.26	1900185.40
58	99859.89	1887106.80	1889754.50
57	99858.35	1876775.39	1879437.65
56	99856.80	1866556.18	1869232.99
55	99855.24	1856447.34	1859138.71
54	99853.67	1846447.09	1849153.01
53	99852.09	1836553.70	1839274.17
52	99850.50	1826765.44	1829500.48
51	99848.91	1817080.67	1819830.26
50	99847.[illegible]1	1807497.74	1810261.88
49	99845.70	1798015.05	1800793.75
48	99844.08	1788631.04	1791424.29
47	99842.45	1779344.17	1782151.98
46	99840.81	1770152.94	1772975.31
45	99839.16	1761055.88	1763892.80
44	99837.51	1752051.55	1754903.03
43	99835.85	1743138.54	1746004.57
42	99834.18	1734315.46	1737196.05
41	99832.50	1725580.95	1728476.10
40	99830.81	1716933.69	1719843.40
39	99829.11	1708372.38	1711296.64
38	99827.41	1699895.74	1702834.56
37	99825.70	1691502.51	1694455.89
36	99823.98	1683191.48	1686159.41
35	99822.25	1674961.44	1677943.92
34	99820.51	1666811.20	1669808.25
33	99818.76	1658739.62	1661751.22
32	99817.01	1650745.55	1653771.71
31	99815.25	1642827.89	1645868.61
30	99813.48	1634985.55	1638040.82

	Sinus	Tangens	Secans
0	6104.85	6110.26	100186.87
1	6133.89	6145.46	100188.66
2	6162.92	6174.66	100190.46
3	6191.96	6203.86	100192.26
4	6220.99	6233.06	100194.07
5	6250.02	6262.26	100195.89
6	6279.05	6291.47	100197.72
7	6308.08	6320.67	100199.56
8	6337.11	6349.88	100201.41
39	6366.14	6379.08	100203.26
40	6395.17	6408.29	100205.12
41	6424.20	6437.50	100206.99
42	6453.23	6466.71	100208.87
43	6482.26	6495.92	100210.76
44	6511.29	6525.13	100212.66
45	6540.31	6554.35	100214.57
46	6569.34	6583.56	100216.49
47	6598.36	6612.78	100218.41
48	6627.39	6641.99	100220.34
49	6656.41	6671.21	100222.28
50	6685.44	6700.43	100224.23
51	6714.46	6729.65	100226.19
52	6743.48	6758.87	100228.16
53	6772.51	6788.09	100230.13
54	6801.53	6817.32	100232.11
55	6830.55	6846.54	100234.10
56	6859.57	6875.77	100236.10
57	6888.59	6904.99	100238.11
58	6917.61	6934.22	100240.13
59	6946.63	6963.45	100242.16
60	6975.65	6992.68	100244.19

	Sinus	Tangens	Secans
30	99813.48	1634985.55	1638040.82
29	99811.70	1627217.44	1630287.28
28	99809.91	1619522.53	1622606.93
27	99808.11	1611899.79	1614998.74
26	99806.30	1604348.19	1607461.70
25	99804.49	1596866.74	1599994.81
24	99802.67	1589454.48	1592597.11
23	99800.84	1582110.45	1585267.64
22	99799.00	1574833.71	1578005.45
21	99797.15	1567623.33	1570809.63
20	99795.29	1560478.41	1563679.27
19	99793.43	1553398.06	1556613.48
18	99791.56	1546381.41	1549611.39
17	99789.68	1539427.60	1542672.15
16	99787.79	1532535.80	1535794.90
15	99785.89	1525705.17	1528978.83
14	99783.98	1518934.90	1522223.12
13	99782.06	1512224.20	1515526.98
12	99780.14	1505572.27	1508889.61
11	99778.21	1498978.36	1502310.26
10	99776.27	1492441.70	1495788.16
9	99774.32	1485961.55	1489322.58
8	99772.36	1479537.18	1482912.77
7	99770.39	1473167.87	1476558.02
6	99768.42	1466852.92	1470257.63
5	99766.44	1460591.63	1464010.90
4	99764.45	1454383.32	1457817.15
3	99762.45	1448227.32	1451676.71
2	99760.44	1442122.97	1445585.92
1	99758.42	1436069.61	1439547.13
0	99756.40	1430066.63	1433558.70
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4	*Sinus*	*Tangens*	*Secans*
0	6975.65	6992.68	100244.19
1	7004.66	7021.91	100246.23
2	7033.68	7051.15	100248.28
3	7062.70	7080.38	100250.34
4	7091.71	7109.61	100252.41
5	7120.73	7138.85	100254.49
6	7149.74	7168.09	100256.58
7	7178.76	7197.33	100258.68
8	7207.77	7226.57	100260.78
9	7236.78	7255.81	100262.89
10	7265.80	7285.05	100265.01
11	7294.81	7314.30	100267.14
12	7323.82	7343.54	100269.28
13	7352.83	7372.79	100271.43
14	7381.84	7402.03	100273.58
15	7410.85	7431.28	100275.74
16	7439.86	7460.53	100277.91
17	7468.87	7489.79	100280.09
18	7497.87	7519.04	100282.28
19	7526.88	7548.29	100284.48
20	7555.89	7577.55	100286.68
21	7584.89	7606.80	100288.89
22	7613.90	7636.06	100291.11
23	7642.90	7665.32	100293.34
24	7671.90	7694.58	100295.58
25	7700.91	7723.84	100297.83
26	7729.91	7753.11	100300.09
27	7758.91	7782.37	100302.36
28	7787.91	7811.64	100304.64
29	7816.91	7840.90	100306.93
30	7845.91	7870.17	100309.22

	Sinus	Tangens	Secans
60	99756.40	1430066.63	1433558.70
59	99754.37	1424113.37	1427620.01
58	99752.33	1418209.24	1421730.45
57	99750.28	1412353.63	1415889.39
56	99748.22	1406545.93	1410096.25
55	99746.15	1400785.56	1404350.45
54	99744.07	1395071.94	1398651.39
53	99741.99	1389404.51	1392998.52
52	99739.90	1383782.70	1387391.28
51	99737.80	1378205.98	1381829.12
50	99735.69	1372673.79	1376311.49
49	99733.57	1367185.60	1370837.87
48	99731.44	1361740.89	1365407.72
47	99729.31	1356339.15	1360020.54
46	99727.17	1350979.86	1354675.82
45	99725.02	1345662.53	1349373.06
44	99722.86	1340386.67	1344111.76
43	99720.69	1335151.79	1338891.44
42	99718.51	1329957.41	1333711.63
41	99716.32	1324803.07	1328571.86
40	99714.13	1319688.30	1323471.65
39	99711.93	1314612.66	1318410.57
38	99709.72	1309575.68	1313388.16
37	99707.50	1304576.93	1308403.98
36	99705.27	1299615.98	1303457.60
35	99703.03	1294692.40	1298548.58
34	99700.79	1289805.77	1293676.51
33	99698.54	1284955.66	1288840.97
32	99696.28	1280141.68	1284041.55
31	99694.01	1275363.41	1279277.86
30	99691.73	1270620.47	1274549.48

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4	*Sinus*	*Tangens*	*Secans*
30	7845.91	7870.17	100309.22
31	7874.91	7899.44	100311.52
32	7903.91	7928.71	100313.83
33	7932.90	7957.98	100316.15
34	7961.90	7987.26	100318.48
35	7990.90	8016.53	100320.81
36	8019.89	8045.81	100323.15
37	8048.89	8075.09	100325.50
38	8077.88	8104.37	100327.86
39	8106.87	8133.65	100330.23
40	8135.87	8162.93	100332.61
41	8164.86	8192.21	100335.00
42	8193.85	8221.50	100337.40
43	8222.84	8250.78	100339.80
44	8251.83	8280.07	100342.21
45	8280.82	8309.36	100344.63
46	8309.81	8338.65	100347.06
47	8338.80	8367.94	100349.50
48	8367.78	8397.23	100351.95
49	8396.77	8426.53	100354.41
50	8425.76	8455.83	100356.87
51	8454.74	8485.12	100359.34
52	8483.73	8514.42	100361.82
53	8512.71	8543.72	100364.31
54	8541.69	8573.02	100366.81
55	8570.67	8602.33	100369.32
56	8599.66	8631.63	100371.84
57	8628.64	8660.94	100374.36
58	8657.62	8690.25	100376.89
59	8686.60	8719.56	100379.43
60	8715.57	8748.87	100381.98

	Sinus	Tangens	Secans
30	99691.73	1270620.47	1274549.4
29	99689.44	1265912.46	1269856.0
28	99687.15	1261239.00	1265197.1
27	99684.85	1256599.71	1260572.4
26	99682.54	1251994.20	1255981.4
25	99680.22	1247422.12	1251423.9
24	99677.89	1242883.10	1246899.5
23	99675.55	1238376.79	1242407.7
22	99673.20	1233902.82	1237948.3
21	99670.85	1229460.85	1233520.9
20	99668.49	1225050.55	1229125.2
19	99666.12	1220671.56	1224760.82
18	99663.74	1216323.56	1220427.39
17	99661.35	1212006.22	1216124.62
16	99658.95	1207719.22	1211852.18
15	99656.55	1203462.23	1207609.76
14	99654.14	1199234.95	1203397.05
13	99651.72	1195037.05	1199213.72
12	99649.29	1190868.24	1195059.48
11	99646.85	1186728.21	1190934.02
10	99644.40	1182616.67	1186837.05
9	99641.94	1178533.31	1182768.27
8	99639.48	1174477.86	1178727.39
7	99637.01	1170450.03	1174714.12
6	99634.53	1166449.53	1170728.19
5	99632.04	1162476.08	1166769.32
4	99629.54	1158529.42	1162837.23
3	99627.03	1154609.27	1158931.65
2	99624.52	1150715.36	1155052.31
1	99622.00	1146847.43	1151198.96
0	99619.47	1143005.23	1147371.32

Sinus	Tangens	Secans
8715.57	8748.87	100381.98
8744.55	8778.18	100384.54
8773.53	8807.49	100387.11
8802.51	8836.81	100389.69
8831.48	8866.12	100392.28
8860.46	8895.44	100394.87
8889.43	8924.76	100397.47
8918.40	8954.08	100400.08
8947.38	8983.41	100402.70
8976.35	9012.73	100405.33
9005.32	9042.06	100407.97
9034.29	9071.38	100410.61
9063.26	9100.71	100413.26
9092.23	9130.04	100415.92
9121.19	9159.38	100418.59
9150.16	9188.71	100421.27
9179.13	9218.04	100423.96
9208.09	9247.38	100426.66
9237.06	9276.72	100429.37
9266.02	9306.06	100432.08
9294.99	9335.40	100434.80
9323.95	9364.74	100437.53
9352.91	9394.09	100440.27
9381.87	9423.44	100443.02
9410.83	9452.78	100445.78
9439.79	9482.13	100448.55
9468.75	9511.48	100451.33
9497.71	9540.84	100454.11
9526.66	9570.19	100456.90
9555.62	9599.55	100459.70
9584.58	9628.90	100462.51

Sinus	Tangens	Secans
99619.47	1143005.23	1147371.32
99616.93	1139188.49	1143569.16
99614.38	1135396.96	1139792.20
99611.82	1131630.40	1136040.21
99609.26	1127888.55	1132312.93
99606.69	1124171.17	1128610.13
99604.11	1120478.03	1124931.56
99601.52	1116808.88	1121276.99
99598.92	1113163.50	1117646.17
99596.31	1109541.64	1114038.90
99593.69	1105943.10	1110454.92
99591.07	1102367.63	1106894.03
99588.44	1098815.01	1103355.99
99585.80	1095285.04	1099840.59
99583.15	1091777.49	1096347.61
99580.49	1088292.14	1092876.84
99577.82	1084828.80	1089428.07
99575.15	1081387.24	1086001.09
99572.47	1077967.27	1082595.69
99569.78	1074568.68	1079211.68
99567.08	1071191.26	1075848.84
99564.37	1067834.84	1072506.99
99561.65	1064499.19	1069185.92
99558.92	1061184.14	1065885.45
99556.19	1057889.50	1062605.38
99553.45	1054615.07	1059345.53
99550.70	1051360.67	1056105.70
99547.94	1048126.11	1052885.72
99545.17	1044911.22	1049685.41
99542.40	1041715.81	1046504.58
99539.62	1038539.71	1043343.05

	Sinus	Tangens	Secans
0	9584.58	9628.90	100462.51
1	9613.53	9658.26	100465.33
2	9642.48	9687.63	100468.16
3	9671.44	9716.99	100470 99
4	9700.39	9746.35	100473.83
5	9729.34	9775.72	100476.68
6	9758.29	9805.09	100479.54
7	9787.24	9834.46	100482.41
8	9816.19	9863.83	100485.29
9	9845.14	9893.20	100488.18
0	9874.08	9922.57	100491.08
1	9903.03	9951.95	100493.99
42	9931.97	9981.33	100496.90
43	9960.92	10010.71	100499.82
44	9989.86	10040.09	100502.75
45	10018.81	10069.47	100505.69
46	10047.75	10098.85	100508.64
47	10076.69	10128.24	100511.60
48	10105.63	10157.63	100514.57
49	10134.57	10187.02	100517.54
50	10163.51	10216.41	100520.52
51	10192.45	10245.80	100523.51
52	10221.38	10275.20	100526.51
53	10250.32	10304.60	100529.52
54	10279.25	10334.00	100532.54
55	10308.19	10363.40	100535.57
56	10337.12	10392.80	100538.60
57	10366.05	10422.20	100541.64
58	10394.99	10451.60	100544.69
59	10423.92	10481.01	100547.75
60	10452.85	10510.42	100550.82

	Sinus	Tangens	Secans
30	99539.62	1038539.71	1043343.05
29	99536.83	1035382.74	1040200.66
28	99534.03	1032244.73	1037077.23
27	99531.22	1029125.51	1033972.59
26	99528.40	1026024.90	1030886.56
25	99525.57	1022942.76	1027818.99
24	99522.74	1019878.90	1024769.71
23	99519.90	1016833.16	1021738.55
22	99517.05	1013805.39	1018725.36
21	99514.19	1010795.42	1015729.98
20	99511.32	1007803.11	1012752.24
19	99508.44	1004828.28	1009792.00
18	99505.55	1001870.80	1006849.09
17	99502.66	998930.50	1003923.38
16	99499.76	996007.24	1001014.70
15	99496.85	993100.88	998122.91
14	99493.93	990211.25	995247.87
13	99491.00	987338.23	992389.43
12	99488.06	984481.66	989547.44
11	99485.12	981641.40	986721.76
10	99482.17	978817.32	983912.27
9	99479.21	976009.27	981118.80
8	99476.24	973217.13	978341.24
7	99473.26	970440.75	975579.44
6	99470.27	967680.00	972833.27
5	99467.28	964934.75	970102.60
4	99464.28	962204.86	967387.30
3	99461.27	959490.22	964687.24
2	99458.25	956790.68	962002.29
1	99455.22	954106.13	959332.33
0	99452.18	951436.45	956677.22

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6	*Sinus*	*Tangens*	*Secans*
0	10452.85	10510.42	100550.82
1	10481.78	10539.83	100553.90
2	10510.70	10569.24	100556.99
3	10539.63	10598.66	100560.09
4	10568.56	10628.08	100563.20
5	10597.48	10657.50	100566.31
6	10626.41	10686.92	100569.43
7	10655.33	10716.34	100572.56
8	10684.25	10745.76	100575.70
9	10713.18	10775.19	100578.85
10	10742.10	10804.62	100582.01
11	10771.02	10834.05	100585.18
12	10799.94	10863.48	100588.35
13	10828.85	10892.91	100591.53
14	10857.77	10922.34	100594.72
15	10886.69	10951.78	100597.92
16	10915.60	10981.22	100601.13
17	10944.52	11010.66	100604.35
18	10973.43	11040.10	100607.58
19	11002.34	11069.54	100610.81
20	11031.26	11098.99	100614.05
21	11060.17	11128.44	100617.30
22	11089.08	11157.89	100620.56
23	11117.99	11187.34	100623.83
24	11146.89	11216.79	100627.11
25	11175.80	11246.25	100630.40
26	11204.71	11275.71	100633.70
27	11233.61	11305.17	100637.01
28	11262.52	11334.63	100640.32
29	11291.42	11364.09	100643.64
30	11320.32	11393.56	100646.97

	Sinus	Tangens	Secans
60	99452.18	951436.45	956677.22
59	99449.14	948781.49	954036.86
58	99446.09	946141.16	951411.10
57	99443.03	943515.31	948799.84
56	99439.96	940903.84	946202.96
55	99436.88	938306.63	943620.33
54	99433.79	935723.55	941051.84
53	99430.69	933154.50	938497.38
52	99427.59	930599.36	935956.82
51	99424.48	928058.02	933430.06
50	99421.36	925530.35	930916.99
49	99418.23	923016.27	928417.49
48	99415.09	920515.64	925931.45
47	99411.94	918028.38	923458.77
46	99408.79	915554.36	920999.34
45	99405.63	913093.48	918553.05
44	99402.46	910645.64	916119.80
43	99399.28	908210.74	913699.49
42	99396.09	905788.67	911292.00
41	99392.89	903379.33	908897.25
40	99389.69	900982.61	906515.12
39	99386.48	898598.43	904145.53
38	99383.26	896226.68	901788.37
37	99380.03	893867.26	899443.54
36	99376.79	891520.08	897110.95
35	99373.54	889185.05	894790.51
34	99370.28	886862.06	892482.11
33	99367.02	884551.03	890185.67
32	99363.75	882251.86	887901.09
31	99360.47	879964.46	885628.28
30	99357.18	877688.74	883367.15
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6	*Sinus*	*Tangens*	*Secans*
30	11320.32	11393.56	100646.97
31	11349.22	11423.03	100650.31
32	11378.12	11452.50	100653.66
33	11407.02	11481.97	100657.02
34	11435.92	11511.44	100660.39
35	11464.82	11540.91	100663.77
36	11493.71	11570.39	100667.15
37	11522.61	11599.87	100670.54
38	11551.51	11629.35	100673.94
39	11580.40	11658.83	100677.35
40	11609.29	11688.31	100680.77
41	11638.18	11717.80	100684.20
42	11667.07	11747.29	100687.64
43	11695.96	11776.78	100691.08
44	11724.85	11806.28	100694.53
45	11753.74	11835.78	100697.99
46	11782.63	11865.28	100701.46
47	11811.51	11894.78	100704.94
48	11840.40	11924.28	100708.43
49	11869.28	11953.78	100711.93
50	11898.16	11983.28	100715.44
51	11927.04	12012.79	100718.96
52	11955.93	12042.30	100722.48
53	11984.81	12071.81	100726.01
54	12013.68	12101.32	100729.55
55	12042.56	12130.84	100733.10
56	12071.44	12160.36	100736.66
57	12100.31	12189.88	100740.23
58	12129.19	12219.40	100743.81
59	12158.06	12248.93	100747.40
60	12186.93	12278.46	100750.99

	Sinus	Tangens	Secans
30	99357.18	877688.74	883367.15
29	99353.88	875424.61	881117.61
28	99350.58	873171.98	878879.57
27	99347.27	870930.77	876652.95
26	99343.95	868700.88	874437.66
25	99340.62	866482.23	872233.61
24	99337.28	864274.75	870040.71
23	99333.93	862078.33	867858.89
22	99330.57	859892.90	865688.05
21	99327.20	857718.38	863528.12
20	99323.83	855554.68	861379.01
19	99320.45	853401.72	859240.65
18	99317.06	851259.43	857112.95
17	99313.66	849127.72	854995.84
16	99310.25	847006.51	852889.23
15	99306.84	844895.73	850793.04
14	99303.42	842795.31	848707.21
13	99299.99	840705.15	846631.65
12	99296.55	838625.19	844566.29
11	99293.10	836555.36	842511.05
10	99289.64	834495.57	840465.86
9	99286.17	832445.77	838430.65
8	99282.70	830405.86	836405.34
7	99279.22	828375.79	834389.86
6	99275.73	826355.47	832384.15
5	99272.23	824344.85	830388.12
4	99268.72	822343.84	828401.71
3	99265.21	820352.39	826424.85
2	99261.69	818370.41	824457.48
1	99258.16	816397.86	822499.52
0	99254.62	814434.64	820550.90

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7	Sinus	Tangens	Secans
0	12186.93	12278.46	100750.99
1	12215.81	12307.99	100754.59
2	12244.68	12337.52	100758.20
3	12273.55	12367.05	100761.82
4	12302.41	12396.58	100765.45
5	12331.28	12426.12	100769.09
6	12360.15	12455.66	100772.74
7	12389.01	12485.20	100776.39
8	12417.88	12514.74	100780.05
9	12446.74	12544.29	100783.72
10	12475.60	12573.84	100787.40
11	12504.46	12603.39	100791.09
12	12533.32	12632.94	100794.79
13	12562.18	12662.49	100798.50
14	12591.04	12692.05	100802.22
15	12619.90	12721.61	100805.95
16	12648.75	12751.17	100809.69
17	12677.61	12780.73	100813.43
18	12706.46	12810.29	100817.18
19	12735.31	12839.86	100820.94
20	12764.16	12869.43	100824.71
21	12793.01	12899.00	100828.49
22	12821.86	12928.57	100832.28
23	12850.71	12958.15	100836.07
24	12879.56	12987.73	100839.88
25	12908.41	13017.31	100843.70
26	12937.25	13046.89	100847.52
27	12966.09	13076.48	100851.35
28	12994.94	13106.07	100855.19
29	13023.78	13135.66	100859.04
30	13052.62	13165.25	100862.90

	Sinus	*Tangens*	*Secans*
60	99254.62	814434.64	820550.90
59	99251.07	812480.71	818611.57
58	99247.51	810535.99	816681.45
57	99243.94	808600.42	814760.48
56	99240.36	806673.94	812848.60
55	99236.78	804756.47	810945.73
54	99233.19	802847.96	809051.82
53	99229.59	800948.35	807166.81
52	99225.98	799057.56	805290.62
51	99222.36	797175.55	803423.21
50	99218.74	795302.24	801564.50
49	99215.11	793437.58	799714.45
48	99211.47	791581.51	797872.98
47	99207.82	789733.96	796040.03
46	99204.16	787894.89	794215.56
45	99200.49	786064.23	792399.50
44	99196.81	784241.91	790591.79
43	99193.13	782427.90	788792.38
42	99189.44	780622.12	787001.20
41	99185.74	778824.53	785218.21
40	99182.03	777035.06	783443.35
39	99178.31	775253.66	781676.56
38	99174.59	773480.28	779917.78
37	99170.86	771714.86	778166.97
36	99167.12	769957.35	776424.06
35	99163.37	768207.69	774689.01
34	99159.61	766465.84	772961.76
33	99155.84	764731.74	771242.27
32	99152.06	763005.33	769530.47
31	99148.28	761286.57	767826.31
30	99144.49	759575.41	766129.76

7	Sinus	Tangens	Secans
30	13052.62	13165.25	100862.90
31	13081.46	13194.84	100866.77
32	13110.30	13224.44	100870.65
33	13139.13	13254.04	100874.53
34	13167.97	13283.64	100878.42
35	13196.81	13313.24	100882.32
36	13225.64	13342.85	100886.23
37	13254.47	13372.46	100890.15
38	13283.30	13402.07	100894.08
39	13312.13	13431.68	100898.02
40	13340.96	13461.29	100901.97
41	13369.79	13490.91	100905.92
42	13398.62	13520.53	100909.88
43	13427.44	13550.15	100913.85
44	13456.27	13579.77	100917.83
45	13485.09	13609.40	100921.82
46	13513.92	13639.03	100925.82
47	13542.74	13668.66	100929.83
48	13571.56	13698.29	100933.85
49	13600.38	13727.93	100937.88
50	13629.19	13757.57	100941.92
51	13658.01	13787.21	100945.96
52	13686.83	13816.85	100950.01
53	13715.64	13846.50	100954.07
54	13744.45	13876.15	100958.14
55	13773.27	13905.80	100962.22
56	13802.08	13935.45	100966.31
57	13830.89	13965.10	100970.41
58	13859.70	13994.76	100974.52
59	13888.50	14024.42	100978.64
60	13917.31	14054.08	100982.76

	Sinus	*Tangens*	*Secans*
30	99144.49	759575.41	766129.76
29	99140.69	757871.79	764440.75
28	99136.88	[illegible]6175.67	762759.23
27	99133.06	754[illegible]09	761085.16
26	99129.23	75280[illegible]	759418.49
25	99125.39	751131.[illegible]	757759.16
24	99121.55	749465.14	756107.13
23	99117.70	747805.76	7[illegible]462.36
22	99113.84	746153.57	752824.78
21	99109.97	744508.55	751194.37
20	99106.09	742870.64	749571.06
19	99102.21	741239.78	747954.82
18	99098.32	739615.95	746345.60
17	99094.42	737999.09	744743.35
16	99090.51	736389.16	743148.03
15	99086.59	734786.10	741559.59
14	99082.66	733189.89	739977.98
13	99078.72	731600.47	738403.18
12	99074.78	730017.80	736835.12
11	99070.83	728441.84	735273.77
10	99066.87	726872.55	733719.09
9	99062.90	725309.87	732171 02
8	99058.92	723753.78	730629.54
7	99054.93	722204.22	729094.60
6	99050.94	720661.16	727566.16
5	99046.94	719124.56	726044.17
4	99042.93	717594.37	724528.59
3	99038.91	716070.56	723019.40
2	99034.88	714553.08	721516.53
1	99030.84	713041.90	720019.96
0	99026.80	711536.97	718529.65

8	*Sinus*	*Tangens*	*Secans*
0	13917.31	14054.08	100982.76
1	13946.12	14083.74	100986.89
2	13974.92	14113.41	100991.03
3	14003.72	14143.08	100995.18
4	14032.52	14172.75	100999.34
5	14061.32	14202.43	101003.51
6	14090.12	14232.11	101007.69
7	14118.92	14261.79	101011.88
8	14147.72	14291.47	101016.07
9	14176.51	14321.15	101020.27
10	14205.31	14350.84	101024.48
11	14234.10	14380.53	101028.70
12	14262.89	14410.22	101032.93
13	14291.68	14439.91	101037.17
14	14320.47	14469.61	101041.42
15	14349.26	14499.31	101045.68
16	14378.05	14529.01	101049.95
17	14406.84	14558.71	101054.23
18	14435.62	14588.42	101058.51
19	14464.40	14618.13	101062.80
20	14493.19	14647.84	101067.10
21	14521.97	14677.55	101071.41
22	14550.75	14707.27	101075.73
23	14579.53	14736.99	101080.06
24	14608.30	14766.71	101084.40
25	14637.08	14796.44	101088.75
26	14665.85	14826.17	101093.11
27	14694.63	14855.90	101097.47
28	14723.40	14885.63	101101.84
29	14752.17	14915.36	101106.22
30	14780.94	14945.10	101110.61

	Sinus	Tangens	Secans
60	99026.80	711536.97	718529.6
59	99022.75	710038.26	717045.5
58	99018.69	708545.73	715567.64
57	99014.62	707059.34	714095.8
56	99010.54	705579.05	712630.1
55	99006.45	704104.82	711170.5
54	99002.36	702636.62	709717.00
53	98998.26	701174.41	708269.41
52	98994.15	699718.06	706827.77
51	98990.03	698267.81	705392.05
50	98985.90	696823.35	703962.20
49	98981.76	695384.73	702538.20
48	98977.62	693951.92	701120.01
47	98973.47	692524.89	699707.60
46	98969.31	691103.59	698300.92
45	98965.14	689687.99	696899.94
44	98960.96	688278.07	695504.64
43	98956.77	686873.78	694114.96
42	98952.57	685475.08	692730.89
41	98948.37	684081.96	691352.39
40	98944.16	682694.37	689979.42
39	98939.94	681312.27	688611.95
38	98935.71	679935.65	687249.95
37	98931.47	678564.46	685893.38
36	98927.23	677198.67	684542.22
35	98922.98	675838.26	683196.42
34	98918.72	674483.18	681855.97
33	98914.45	673133.41	680520.82
32	98910.17	671788.91	679190.95
31	98905.88	670449.66	677866.32
30	98901.58	669115.62	676546.91

8	*Sinus*	*Tangens*	*Secans*
0	14780.94	14945.10	101110.61
1	14809.71	14974.84	101115.01
2	14838.48	15004.58	101119 42
3	14867.24	15034.33	101123.84
4	14896.01	15064.08	101128.27
35	14924.77	15093.83	101132.71
36	14953.53	15123.58	101137.15
37	14982.30	15153.33	101141.60
38	15011.06	15183.09	101146.06
39	15039.81	15212.85	101150.53
40	15068.57	15242.61	101155.01
41	15097.33	15272.38	101159.50
42	15126.08	15302.15	101164.00
43	15154.84	15331.92	101168.51
44	15183.59	15361.89	101173.03
45	15212.34	15391.47	101177.56
46	15241.09	15421.25	101182.09
47	15269.84	15451.03	101186.63
48	15298.58	15480.82	101191.18
49	15327.33	15510.61	101195.74
50	15356.07	15540.40	101200.31
51	15384.82	15570.19	101204.89
52	15413.56	15599.98	101209.48
53	15442.30	15629.78	101214.08
54	15471.04	15659.58	101218.69
55	15499.78	15689.38	101223.31
56	15528.51	15719.19	101227.93
57	15557.25	15749.00	101232.56
58	15585.98	15778.81	101237.20
59	15614.72	15808.62	101241.85
60	15643.45	15838.44	101246.51

	Sinus	Tangens	Secans
0	98901.58	669115.62	676546.91
9	98897.28	667786.77	675232.68
8	98892.97	666463.07	673923.60
7	98888.65	665144.49	672619.65
6	98884.32	663831.00	671320.79
5	98879.98	662522.58	670026.99
4	98875.63	661219.19	668738.22
3	98871.28	659920.80	667454.46
2	98866.92	658627.39	666175.68
1	98862.55	657338.92	664901.84
0	98858.17	656055.38	663632.93
9	98853.78	654776.72	662368.90
8	98849.38	653502.93	661109.73
7	98844.98	652233.96	659855.40
6	98840.57	650969.81	658605.87
5	98836.15	649710.43	657361.12
4	98831.72	648455.81	656121.13
3	98827.28	647205.91	654885.86
2	98822.83	645960.70	653655.28
1	98818.38	644720.17	652429.38
0	98813.92	643484.28	651208.12
9	98809.45	642253.01	649991.48
8	98804.97	641026.33	648779.44
7	98800.48	639804.22	647571.95
6	98795.98	638586.65	646369.01
5	98791.48	637373.59	645170.59
4	98786.97	636165.02	643976.66
3	98782.45	634960.92	642787.19
2	98777.92	633761.26	641602.16
1	98773.38	632566.01	640421.54
0	98768.83	631375.15	639245.32
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9	Sinus	Tangens	Secans
0	15643.45	15838.44	101246.51
1	15672.18	15868.26	101251.18
2	15700.91	15898.08	101255.86
3	15729.63	15927.91	101260.55
4	15758.36	15957.74	101265.25
5	15787.08	15987.57	101269.96
6	15815.81	16017.40	101274.67
7	15844.53	16047.24	101279.39
8	15873.25	16077.08	101284.12
9	15901.97	16106.92	101288.86
10	15930.69	16136.77	101293.61
11	15959.40	16166.62	101298.37
12	15988.12	16196.47	101303.14
13	16016.83	16226.32	101307.92
14	16045.55	16256.17	101312.71
15	16074.26	16286.03	101317.51
16	16102.97	16315.89	101322.31
17	16131.67	16345.76	101327.12
18	16160.38	16375.63	101331.94
19	16189.09	16405.50	101336.77
20	16217.79	16435.37	101341.61
21	16246.50	16465.25	101346.46
22	16275.20	16495.13	101351.32
23	16303.90	16525.01	101356.19
24	16332.60	16554.89	101361.07
25	16361.29	16584.78	101365.95
26	16389.99	16614.67	101370.84
27	16418.68	16644.56	101375.74
28	16447.38	16674.46	101380.65
29	16476.07	16704.36	101385.57
30	16504.76	16734.26	101390.50

	Sinus	Tangens	Secans
60	98768.83	631375.15	639245.32
59	98764.28	630188.66	638073.47
58	98759.72	629006.51	636905.95
57	98755.15	627828.68	635742.76
56	98750.57	626655.14	634583.86
55	98745.98	625485.88	633429.23
54	98741.38	624320.86	632278.84
53	98736.77	623160.07	631132.69
52	98732.16	622003.47	629990.73
51	98727.54	620851.06	628852.95
50	98722.91	619702.79	627719.33
49	98718.27	618558.67	626589.84
48	98713.62	617418.65	625464.46
47	98708.97	616282.72	624343.16
46	98704.31	615150.85	623225.94
45	98699.64	614023.03	622112.75
44	98694.96	612899.23	621003.59
43	98690.27	611779.43	619898.43
42	98685.57	610663.60	618797.25
41	98680.86	609551.74	617700.03
40	98676.15	608443.81	616606.74
39	98671.43	607339.79	615517.36
38	98666.70	606239.67	614431.89
37	98661.96	605143.43	613350.28
36	98657.21	604051.03	612272.53
35	98652.46	602962.47	611198.61
34	98647.70	601877.72	610128.50
33	98642.93	600796.76	609062.19
32	98638.15	599719.57	607999.64
31	98633.36	598646.14	606940.85
30	98628.56	597576.44	605885.80

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9	Sinus	Tangens	Secans
30	16504.76	16734.26	101390.50
31	16533.45	16764.16	101395.44
32	16562.14	16794.07	101400.39
33	16590.82	16823.98	101405.35
34	16619.51	16853.89	101410.32
35	16648.19	16883.81	101415.30
36	16676.87	16913.73	101420.29
37	16705.55	16943.65	101425.29
38	16734.23	16973.58	101430.29
39	16762.91	17003.51	101435.30
40	16791.59	17033.44	101440.32
41	16820.26	17063.37	101445.35
42	16848.94	17093.31	101450.39
43	16877.61	17123.25	101455.44
44	16906.28	17153.19	101460.50
45	16934.95	17183.14	101465.57
46	16963.62	17213.09	101470.64
47	16992.28	17243.04	101475.72
48	17020.95	17273.00	101480.81
49	17049.61	17302.96	101485.91
50	17078.28	17332.92	101491.02
51	17106.94	17362.88	101496.14
52	17135.60	17392.85	101501.27
53	17164.25	17422.82	101506.41
54	17192.91	17452.79	101511.56
55	17221.56	17482.77	101516.72
56	17250.22	17512.75	101521.89
57	17278.87	17542.73	101527.07
58	17307.52	17572.72	101532.26
59	17336.17	17602.71	101537.46
60	17364.82	17632.70	101542.67

	Sinus	Tangens	Secans
30	98628.56	597576.44	605885.80
29	98623.75	596510.45	604834.45
28	98618.94	595448.15	603786.80
27	98614.12	594389.52	602742.82
26	98609.29	593334.55	601702.50
25	98604 45	592283.22	600665.81
24	98599.60	591235.50	599632.74
23	98594.74	590191.28	598603.26
22	98589.88	589150.84	597577.37
21	98585.01	588113.86	596555.04
20	98580.13	587080.42	595536.25
19	98575.24	586050.51	594520.98
18	98570.34	585024.10	593509.22
17	98565.44	584001.17	592500.95
16	98560.53	582981.72	591496.14
15	98555.61	581965.72	590494.79
14	98550.68	580953.15	589496.88
13	98545.74	579944.00	588502.38
12	98540.79	578938.25	587511.28
11	98535.83	577935.88	586523.56
10	98530.87	576936.88	585539.20
9	98525.90	575941.22	584558.20
8	98520.92	574948.89	583580.53
7	98515.93	573959.88	582606.17
6	98510.93	572974.16	581635.10
5	98505.92	571991.73	580667.32
4	98500.91	571012.56	579702.80
3	98495.89	570036.63	578741.53
2	98490.86	569063.94	577783.50
1	98485.82	568094.46	576828.67
0	98480.77	567128.18	575877.05
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10	Sinus	Tangens	Secans
0	17364.82	17632.70	101542.67
1	17393.46	17662.69	101547.88
2	17422.11	17692.69	101553.10
3	17450.75	17722.69	101558.33
4	17479.39	17752.69	101563.57
5	17508.03	17782.70	101568.82
6	17536.67	17812.71	101574.08
7	17565.31	17842.72	101579.35
8	17593.95	17872.74	101584.63
9	17622.58	17902.76	101589.92
10	17651.21	17932.78	101595.21
11	17679.84	17962.81	101600.51
12	17708.47	17992.84	101605.82
13	17737.10	18022.87	101611.14
14	17765.73	18052.91	101616.47
15	17794.35	18082.95	101621.81
16	17822.98	18112.99	101627.16
17	17851.60	18143.03	101632.52
18	17880.22	18173.08	101637.89
19	17908.84	18203.13	101643.27
20	17937.46	18233.18	101648.66
21	17966.07	18263.24	101654.06
22	17994.69	18293.30	101659.46
23	18023.30	18323.36	101664.87
24	18051.91	18353.43	101670.29
25	18080.52	18383.50	101675.72
26	18109.13	18413.57	101681.16
27	18137.74	18443.65	101686.61
28	18166.35	18473.73	101692.07
29	18194.95	18503.81	101697.54
30	18223.55	18533.90	101703.02

	Sinus	Tangens	Secans
60	98480.77	567128.18	575877.05
59	98475.71	566165.09	574928.61
58	98470.65	565205.16	573983.33
57	98465.58	564248.38	573041.21
56	98460.50	563294.74	572102.23
55	98455.41	562344.21	571166.36
54	98450.31	561396.80	570233.60
53	98445.21	560452.47	569303.93
52	98440.10	559511.21	568377.34
51	98434.98	558573.02	567453.80
50	98429.85	557637.86	566533.31
49	98424.71	556705.74	565615.84
48	98419.56	555776.63	564701.40
47	98414.40	554850.52	563789.95
46	98409.24	553927.40	562881.48
45	98404.07	553007.24	561975.99
44	98398.89	552090.05	561073.45
43	98393.70	551175.79	560173.86
42	98388.50	550264.46	559277.19
41	98383.29	549356.04	558383.43
40	98378.08	548450.52	557492.58
39	98372.86	547547.88	556604.60
38	98367.63	546648.12	555719.50
37	98362.39	545751.21	554837.26
36	98357.14	544857.15	553957.86
35	98351.89	543965.92	553081.29
34	98346.63	543077.50	552207.54
33	98341.36	542191.88	551336.59
32	98336.08	541309.06	550468.43
31	98330.79	540429.01	549603.05
30	98325.49	5395[illegible]72	548740.43

Sinus	Tangens	Secans
18223.55	18533.90	101703.02
18252.15	18563.99	101708.51
18280.75	18594.08	101714.01
18309.35	18624.18	101719.52
18337.95	18654.28	101725.04
18366.54	18684.38	101730.56
18395.13	18714.49	101736.09
18423.73	18744.60	101741.63
18452.32	18774.71	101747.18
18480.91	18804.83	101752.74
18509.49	18834.95	101758.31
18538.08	18865.07	101763.89
18566.66	18895.20	101769.48
18595.24	18925.33	101775.08
18623.82	18955.46	101780.69
18652.40	18985.59	101786.31
18680.98	19015.73	101791.94
18709.56	19045.87	101797.58
18738.13	19076.02	101803.22
18766.70	19106.17	101808.87
18795.27	19136.32	101814.53
18823.84	19166.48	101820.20
18852.41	19196.64	101825.88
18880.98	19226.80	101831.57
18909.54	19256.96	101837.27
18938.11	19287.13	101842.98
18966.67	19317.30	101848.70
18995.23	19347.48	101854.43
19023.79	19377.66	101860.17
19052.34	19407.84	101865.92
19080.90	19438.03	101871.68

	Sinus	Tangens	Secans
30	98325.49	539551.72	548740.43
29	98320.18	538677.18	547880.55
28	98314.87	537805.38	547023.42
27	98309.55	536936.30	546169.01
26	98304.22	536069.93	545317.31
25	98298.88	535206.26	544468.31
24	98293.53	534345.27	543621.99
23	98288.17	533486.96	542778.35
22	98282.81	532631.31	541937.37
21	98277.44	531778.30	541099.03
20	98272.06	530927.93	540263.33
19	98266.67	530080.18	539430.26
18	98261.27	529235.05	538599.79
17	98255.87	528392.51	537771.92
16	98250.46	527552.55	536946.64
15	98245.04	526715.17	536123.93
14	98239.61	525880.35	535303.79
13	98234.17	525048.09	534486.20
12	98228.72	524218.36	533671.14
11	98223.27	523391.16	532858.61
10	98217.81	522566.47	532048.60
9	98212.34	521744.28	531241.09
8	98206.86	520924.59	530436.08
7	98201.37	520107.38	529633.54
6	98195.87	519292.64	528833.47
5	98190.36	518480.35	528035.87
4	98184.85	517670.51	527240.70
3	98179.33	516863.11	526447.98
2	98173.80	516058.13	525657.68
1	98168.26	515255.57	524869.79
0	98162.71	514455.40	524084.31

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11	*Sinus*	*Tangens*	*Secans*
0	19080.90	19438.03	101871.68
1	19109.45	19468.22	101877.44
2	19138.00	19498.41	101883.21
3	19166.55	19528.61	101888.99
4	19195.10	19558.81	101894.78
5	19223.65	19589.01	101900.58
6	19252.20	19619.22	101906.39
7	19280.74	19649.43	101912.21
8	19309.28	19679.64	101918.04
9	19337.82	19709.86	101923.88
10	19366.36	19740.08	101929.73
11	19394.90	19770.30	101935.59
12	19423.44	19800.53	101941.46
13	19451.97	19830.76	101947.34
14	19480.50	19861.00	101953.23
15	19509.03	19891.24	101959.12
16	19537.56	19921.48	101965.02
17	19566.09	19951.72	101970.93
18	19594.61	19981.97	101976.85
19	19623.14	20012.22	101982.78
20	19651.66	20042.48	101988.72
21	19680.18	20072.74	101994.67
22	19708.70	20103.00	102000.63
23	19737.22	20133.27	102006.60
24	19765.73	20163.54	102012.58
25	19794.25	20193.81	102018.57
26	19822.76	20224.09	102024.57
27	19851.27	20254.37	102030.58
28	19879.78	20284.65	102036.60
29	19908.29	20314.94	102042.63
30	19936.79	20345.23	102048.67

	Sinus	Tangens	Secans
60	98162.71	514455.40	524084.31
59	98157.16	513657.63	523301.21
58	98151.60	512862.24	522520.50
57	98146.03	512069.21	521742.16
56	98140.45	511278.55	520966.18
55	98134.86	510490.24	520192.54
54	98129.26	509704.26	519421.25
53	98123.66	508920.61	518652.28
52	98118.05	508139.28	517885.63
51	98112.43	507360.25	517121.28
50	98106.80	506583.52	516359.24
49	98101.16	505809.07	515599.48
48	98095.51	505036.90	514841.99
47	98089.86	504267.00	514086.77
46	98084.20	503499.35	513333.81
45	98078.53	502733.95	512583.09
44	98072.85	501970.78	511834.61
43	98067.16	501209.84	511088.35
42	98061.46	500451.11	510344.31
41	98055.76	499694.59	509602.48
40	98050.05	498940.27	508862.84
39	98044.33	498188.13	508125.39
38	98038.60	497438.17	507390.12
37	98032.86	496690.37	506657.01
36	98027.11	495944.74	505926.06
35	98021.36	495201.25	505197.26
34	98015.60	494459.90	504470.60
33	98009.83	493720.68	503746.07
32	98004.05	492983.58	503023.67
31	97998.26	492248.59	502303.37
30	97992.47	491515.70	501585.17

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11	Sinus	Tangens	Secans
30	19936.79	20345.23	102048.67
31	19965.30	20375.52	102054.71
32	19993.80	20405.82	102060.76
33	20022.30	20436.12	102066.82
34	20050.80	20466.43	102072.89
35	20079.30	20496.74	102078.97
36	20107.79	20527.05	102085.06
37	20136.29	20557.37	102091.16
38	20164.78	20587.69	102097.27
39	20193.27	20618.01	102103.39
40	20221.76	20648.34	102109.52
41	20250.24	20678.67	102115.66
42	20278.73	20709.00	102121.81
43	20307.21	20739.34	102127.97
44	20335.69	20769.68	102134.14
45	20364.17	20800.03	102140.32
46	20392.65	20830.38	102146.50
47	20421.13	20860.73	102152.69
48	20449.61	20891.09	102158.89
49	20478.08	20921.45	102165.10
50	20506.55	20951.81	102171.32
51	20535.02	20982.18	102177.55
52	20563.49	21012.55	102183.79
53	20591.95	21042.93	102190.04
54	20620.42	21073.31	102196.30
55	20648.88	21103.69	102202.57
56	20677.34	21134.07	102208.85
57	20705.80	21164.46	102215.14
58	20734.26	21194.85	102221.44
59	20762.71	21225.25	102227.75
60	20791.17	21255.65	102234.07

	Sinus	Tangens	Secans
30	97992.47	491515.70	501585.17
29	97986.67	490784.91	500869.07
28	97980.86	490056.20	500155.05
27	97975.04	489329.56	499443.11
26	97969.21	488604.99	498733.23
25	97963.37	487882.48	498025.41
24	97957.52	487162.01	497319.64
23	97951.67	486443.59	496615.91
22	97945.81	485727.19	495914.21
21	97939.94	485012.82	495214.53
20	97934.06	484300.45	494516.87
19	97928.17	483590.10	493821.20
18	97922.28	482881.74	493127.54
17	97916.38	482175.36	492435.86
16	97910.47	481470.96	491746.16
15	97904.55	480768.54	491058.44
4	97898.62	480068.08	490372.67
3	97892.68	479369.57	489688.86
2	97886.74	478673.00	489007.00
1	97880.79	477978.37	488327.07
0	97874.83	477285.67	487649.07
9	97868.86	476594.90	486972.99
8	97862.88	475906.03	486298.83
7	97856.89	475219.07	485626.57
6	97850.90	474534.01	484956.21
5	97844.90	473850.83	484287.74
4	97838.89	473169.54	483621.14
3	97832.87	472490.12	482956.43
2	97826.84	471812.56	482293.57
1	97820.80	471136.86	481632.58
0	97814.76	470463.01	480973.43

12	Sinus	Tangens	Secans
0	20791.17	21255.65	102234.07
1	20819.62	21286.06	102240.40
2	20848.07	21316.47	102246.73
3	20876.52	21346.88	102253.07
4	20904.97	21377.30	102259.42
5	20933.41	21407.72	102265.78
6	20961.86	21438.14	102272.15
7	20990.30	21468.57	102278.53
8	21018.74	21499.00	102284.92
9	21047.18	21529.44	102291.32
10	21075.61	21559.88	102297.73
11	21104.05	21590.32	102304.15
12	21132.48	21620.77	102310.58
13	21160.91	21651.22	102317.02
14	21189.34	21681.67	102323.47
15	21217.77	21712.13	102329.93
16	21246.19	21742.59	102336.40
17	21274.62	21773.06	102342.88
18	21303.04	21803.53	102349.37
19	21331.46	21834.00	102355.87
20	21359.88	21864.48	102362.38
21	21388.29	21894.96	102368.90
22	21416.71	21925.44	102375.43
23	21445.12	21955.93	102381.96
24	21473.53	21986.42	102388.50
25	21501.94	22016.92	102395.05
26	21530.35	22047.42	102401.61
27	21558.76	22077.93	102408.18
28	21587.16	22108.44	102414.76
29	21615.56	22138.95	102421.35
30	21643.96	22169.47	102427.95

	Sinus	Tangens	Secans
60	97814.76	470463.01	480973.43
59	97808.71	469791.00	480316.13
58	97802.65	469120.83	479660.66
57	97796.58	468452.48	479007.02
56	97790.50	467785.95	478355.20
55	97784.41	467121.24	477705.19
54	97778.32	466458.32	477056.99
53	97772.22	465797.21	476410.58
52	97766.11	465137.88	475765.96
51	97759.99	464480.34	475123.12
50	97753.86	463824.57	474482.06
49	97747.73	463170.56	473842.77
48	97741.59	462518.32	473205.23
47	97735.44	461867.83	472569.45
46	97729.28	461219.08	471935.42
45	97723.11	460572.07	471303.13
44	97716.93	459926.80	470672.56
43	97710.75	459283.25	470043.72
42	97704.56	458641.41	469416.60
41	97698.36	458001.29	468791.19
40	97692.15	457362.87	468167.48
39	97685.93	456726.14	467545.48
38	97679.70	456091.11	466925.16
37	97673.47	455457.76	466306.52
36	97667.23	454826.08	465689.56
35	97660.98	454196.08	465074.27
34	97654.72	453567.73	464460.64
33	97648.45	452941.05	463848.67
32	97642.17	452316.01	463238.35
31	97635.89	451692.61	462629.67
30	97629.60	451070.85	462022.63
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12	*Sinus*	*Tangens*	*Secans*
30	21643.96	22169.47	102427.95
31	21672.36	22199.99	102434.56
32	21700.76	22230.51	102441.18
33	21729.15	22261.04	102447.81
34	21757.54	22291.57	102454.45
35	21785.93	22322.11	102461.10
36	21814.32	22352.65	102467.76
37	21842.71	22383.19	102474.43
38	21871.10	22413.74	102481.11
39	21899.48	22444.29	102487.80
40	21927.86	22474.85	102494.49
41	21956.24	22505.41	102501.19
42	21984.62	22535.97	102507.90
43	22013.00	22566.54	102514.62
44	22041.37	22597.11	102521.35
45	22069.74	22627.69	102528.09
46	22098.11	22658.27	102534.84
47	22126.48	22688.85	102541.60
48	22154.85	22719.44	102548.37
49	22183.21	22750.03	102555.15
50	22211.58	22780.63	102561.94
51	22239.94	22811.23	102568.74
52	22268.30	22841.83	102575.55
53	22296.66	22872.44	102582.37
54	22325.01	22903.05	102589.20
55	22353.37	22933.67	102596.04
56	22381.72	22964.29	102602.89
57	22410.07	22994.92	102609.75
58	22438.41	23025.55	102616.62
59	22466.76	23056.18	102623.50
60	22495.11	23086.82	102630.39

	Sinus	Tangens	Secans
30	97629.60	451070.85	462022.63
29	97623.30	450450.72	461417.22
28	97616.99	449832.21	460813.43
27	97610.67	449215.32	460211.26
26	97604.35	448600.04	459610.70
25	97598.02	447986.36	459011.74
24	97591.68	447374.28	458414.39
23	97585.33	446763.79	457818.62
22	97578.97	446154.89	457224.44
21	97572.60	445547.56	456631.83
20	97566.23	444941.81	456040.80
19	97559.85	444337.62	455451:34
18	97553.46	443734.99	454863.44
17	97547.06	443133.92	454277.09
16	97540.65	442534.39	453692.29
15	97534.23	441936.41	453109.03
14	97527.81	441339.96	452527.30
13	97521.38	440745.04	451947.11
12	97514.94	440151:64	451368.44
11	97508.49	439559.76	450791.29
10	97502.03	438969.40	450215.65
9	97495.56	438380.54	449641.52
8	97489.09	437793.17	449068.89
7	97482.61	437207.31	448497.75
6	97476.12	436622.93	447928.10
5	97469.62	436040.03	447359.93
4	97463.11	435458.61	446793.24
3	97456.60	434878.66	446228.03
2	97450.08	434300.18	445664.28
1	97443.55	433723.16	445101.98
0	97437.01	433147.59	444541.15

2	Sinus	Tangens	Secans
0	21643.96	22169.47	102427.95
1	21672.36	22199.99	102434.56
2	21700.76	22230.51	102441.18
3	21729.15	22261.04	102447.81
4	21757.54	22291.57	102454.45
5	21785.93	22322.11	102461.10
6	21814.32	22352.65	102467.76
7	21842.71	22383.19	102474.43
8	21871.10	22413.74	102481.11
9	21899.48	22444.29	102487.80
0	21927.86	22474.85	102494.49
1	21956.24	22505.41	102501.19
2	21984.62	22535.97	102507.90
3	22013.00	22566.54	102514.62
4	22041.37	22597.11	102521.35
5	22069.74	22627.69	102528.09
6	22098.11	22658.27	102534.84
7	22126.48	22688.85	102541.60
8	22154.85	22719.44	102548.37
9	22183.21	22750.03	102555.15
0	22211.58	22780.63	102561.94
1	22239.94	22811.23	102568.74
2	22268.30	22841.83	102575.55
3	22296.66	22872.44	102582.37
4	22325.01	22903.05	102589.20
5	22353.37	22933.67	102596.04
6	22381.72	22964.29	102602.89
57	22410.07	22994.92	102609.75
58	22438.41	23025.55	102616.62
59	22466.76	23056.18	102623.50
60	22495.11	23086.82	102630.39

	Sinus	Tangens	Secans
30	97629.60	451070.85	462022.63
29	97623.30	450450.72	461417.22
28	97616.99	449832.21	460813.43
27	97610.67	449215.32	460211.26
26	97604.35	448600.04	459610.70
25	97598.02	447986.36	459011.74
24	97591.68	447374.28	458414.39
23	97585.33	446763.79	457818.62
22	97578.97	446154.89	457224.44
21	97572.60	445547.56	456631.83
20	97566.23	444941.81	456040.80
19	97559.85	444337.62	455451.34
18	97553.46	443734.99	454863.44
17	97547.06	443133.92	454277.09
16	97540.65	442534.39	453692.29
15	97534.23	441936.41	453109.03
14	97527.81	441339.96	452527.30
13	97521.38	440745.04	451947.11
12	97514.94	440151.64	451368.44
11	97508.49	439559.76	450791.29
10	97502.03	438969.40	450215.65
9	97495.56	438380.54	449641.52
8	97489.09	437793.17	449068.89
7	97482.61	437207.31	448497.75
6	97476.12	436622.93	447928.10
5	97469.62	436040.03	447359.93
4	97463.11	435458.61	446793.24
3	97456.60	434878.66	446228.03
2	97450.08	434300.18	445664.28
1	97443.55	433723.16	445101.98
0	97437.01	433147.59	444541.15
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3	*Sinus*	*Tangens*	*Secans*
0	22495.11	23086.82	102630.39
1	22523.45	23117.46	102637.29
2	22551.79	23148.11	102644.20
3	22580.13	23178.76	102651.12
4	22608.46	23209.41	102658.05
5	22636.80	23240.07	102664.99
6	22665.13	23270.73	102671.94
7	22693.46	23301.40	102678.90
8	22721.79	23332.07	102685.87
9	22750.12	23362.74	102692.84
0	22778.44	23393.42	102699.82
1	22806.77	23424.10	102706.81
2	22835.09	23454.79	102713.81
3	22863.41	23485.48	102720.82
4	22891.72	23516.17	102727.84
5	22920.04	23546.87	102734.87
6	22948.35	23577.58	102741.91
7	22976.66	23608.29	102748.96
8	23004.97	23639.00	102756.02
9	23033.28	23669.72	102763.09
0	23061.59	23700.44	102770.17
1	23089.89	23731.16	102777.26
2	23118.19	23761.89	102784.36
3	23146.49	23792.62	102791.47
4	23174.79	23823.36	102798.59
5	23203.09	23854.10	102805.72
6	23231.38	23884.85	102812.86
7	23259.67	23915.60	102820.01
8	23287.96	23946.35	102827.17
9	23316.25	23977.11	102834.34
0	23344.54	24007.87	102841.52

	Sinus	Tangens	Secans
60	97437.01	433147.59	444541.15
59	97430.46	432573.47	443981.76
58	97423.90	432000.79	443423.82
57	97417.34	431429.55	442867.31
56	97410.77	430859.74	442312.24
55	97404.19	430291.36	441758.59
54	97397.60	429724.40	441206.37
53	97391.00	429158.85	440655.56
52	97384.39	428594.72	440106.16
51	97377.78	428031.99	439558.17
50	97371.16	427470.66	439011.58
49	97364.53	426910.72	438466.38
48	97357.89	426352.18	437922.57
47	97351.24	425795.01	437380.15
46	97344.58	425239.23	436839.10
45	97337.92	424684.82	436299.43
44	97331.25	424131.77	435761.13
43	97324.57	423580.09	435224.19
42	97317.88	423029.77	434688.61
41	97311.18	422480.80	434154.38
40	97304.48	421933.18	433621.50
39	97297.77	421386.90	433089.96
38	97291.05	420841.96	432559.77
37	97284.32	420298.35	432030.90
36	97277.58	419756.06	431503.36
35	97270.84	419215.10	430977.15
34	97264.09	418675.46	430452.25
33	97257.33	418137.13	429928.67
32	97250.56	417600.11	429406.40
31	97243.78	417064.40	428885.43
30	97236.99	416529.98	428365.76

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13	*Sinus*	*Tangens*	*Secans*
30	23344.54	24007.87	102841.52
31	23372.82	24038.64	102848.71
32	23401.10	24069.41	102855.91
33	23429.38	24100.19	102863.12
34	23457.66	24130.97	102870.34
35	23485.94	24161.76	102877.57
36	23514.21	24192.55	102884.81
37	23542.48	24223.34	102892.06
38	23570.75	24254.14	102899.32
39	23599.02	24284.94	102906.58
40	23627.29	24315.75	102913.85
41	23655.55	24346.56	102921.13
42	23683.81	24377.37	102928.42
43	23712.07	24408.19	102935.72
44	23740.33	24439.01	102943.03
45	23768.59	24469.84	102950.35
46	23796.84	24500.67	102957.68
47	23825.10	24531.51	102965.02
48	23853.35	24562.35	102972.37
49	23881.59	24593.20	102979.73
50	23909.84	24624.05	102987.10
51	23938.08	24654.91	102994.48
52	23966.33	24685.77	103001.87
53	23994.57	24716.63	103009.27
54	24022.80	24747.50	103016.68
55	24051.04	24778.37	103024.10
56	24079.27	24809.25	103031.53
57	24107.51	24840.13	103038.97
58	24135.74	24871.02	103046.42
59	24163.96	24901.91	103053.88
60	24192.19	24932.80	103061.35

	Sinus	Tangens	Secans
30	97236.99	416529.98	428365.76
29	97230.19	415996.85	427847.38
28	97223.39	415465.01	427330.29
27	97216.58	414934.46	426814.49
26	97209.76	414405.19	426299.96
25	97202.93	413877.19	425786.71
24	97196.09	413350.46	425274.74
23	97189.25	412824.99	424764.02
22	97182.40	412300.79	424254.57
21	97175.54	411777.84	423746.37
20	97168.67	411256.14	423239.43
19	97161.79	410735.69	422733.73
18	97154.91	410216.49	422229.28
17	97148.02	409698.52	421726.06
16	97141.12	409181.78	421224.08
15	97134.21	408666.27	420723.33
14	97127.29	408151.99	420223.80
13	97120.36	407638.92	419725.49
12	97113.43	407127.07	419228.40
11	97106.49	406616.43	418732.52
10	97099.54	406107.00	418237.85
9	97092.58	405598.77	417744.38
8	97085.61	405091.74	417252.10
7	97078.63	404585.90	416761.02
6	97071.65	404081.25	416271.14
5	97064.66	403577.79	415782.43
4	97057.66	403075.50	415294.91
3	97050.65	402574.40	414808.56
2	97043.63	402074.46	414323.39
1	97036.60	401575.70	413839.39
0	97029.57	401078.09	413356.55
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14	*Sinus*	*Tangens*	*Secans*
0	24192.19	24932.80	103061.35
1	24220.41	24963.70	103068.[illegible]
2	24248.63	24994.60	103076.32
3	24276.85	25025.51	103083.82
4	24305.07	25056.42	103091.33
5	24333.29	25087.34	103098.85
6	24361.50	25118.26	103106.38
7	24389.71	25149.19	103113.92
8	24417.92	25180.12	103121.47
9	24446.13	25211.06	103129.03
10	24474.33	25242.00	103136.60
11	24502.54	25272.94	103144.18
12	24530.74	25303.89	103151.77
13	24558.94	25334.84	103159.36
14	24587.13	25365.80	103166.97
15	24615.33	25396.76	103174.59
16	24643.52	25427.73	103182.22
17	24671.71	25458.70	103189.85
18	24699.90	25489.68	103197.50
19	24728.09	25520.66	103205.16
20	24756.27	25551.65	103212.82
21	24784.45	25582.64	103220.50
22	24812.63	25613.63	103228.18
23	24840.81	25644.63	103235.88
24	24868.99	25675.63	103243.59
25	24897.16	25706.64	103251.30
26	24925.33	25737.66	103259.03
27	24953.50	25768.68	103266.76
28	24981.67	25799.70	103274.51
29	25009.84	25830.73	103282.27
30	25038.00	25861.76	103290.03

	Sinus	Tangens	Secans
60	97029.57	401078.09	413356.55
59	97022.53	400581.65	412874.87
58	97015.48	400086.36	412394.35
57	97008.42	399592.23	411914.98
56	97001.35	399099.24	411436.75
55	96994.28	398607.39	410959.67
54	96987.20	398116.69	410483.74
53	96980.11	397627.12	410008.93
52	96973.01	397138.68	409535.26
51	96965.90	396651.37	409062.72
50	96958.79	396165.18	408591.30
49	96951.67	395680.11	408121.00
48	96944.54	395196.15	407651.81
47	96937.40	394713.31	407183.74
46	96930.25	394231.57	406716.77
45	96923.09	393750.94	406250.91
44	96915.92	393271.41	405786.15
43	96908.75	392792.97	405322.49
42	96901.57	392315.63	404859.92
41	96894.38	391839.37	404398.44
40	96887.18	391364.20	403938.04
39	96879.98	390890.11	403478.72
38	96872.77	390417.10	403020.48
37	96865.55	389945.16	402563.32
36	96858.32	389474.29	402107.22
35	96851.08	389004.48	401652.19
34	96843.83	388535.74	401198.23
33	96836.57	388068.05	400745.32
32	96829.31	387601.42	400293.47
31	96822.04	387135.84	399842.67
30	96814.76	386671.31	399392.92

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14	Sinus	Tangens	Secans
30	25038.00	25861.76	103290.03
31	25066.16	25892.80	103297.81
32	25094.32	25923.84	103305.59
33	25122.48	25954.88	103313.39
34	25150.63	25985.93	103321.19
35	25178.79	26016.99	103329.01
36	25206.94	26048.05	103336.83
37	25235.08	26079.11	103344.67
38	25263.23	26110.18	103352.51
39	25291.37	26141.26	103360.37
40	25319.52	26172.34	103368.23
41	25347.66	26203.42	103376.11
42	25375.79	26234.51	103383.99
43	25403.93	26265.60	103391.88
44	25432.06	26296.70	103399.79
45	25460.19	26327.80	103407.70
46	25488.32	26358.91	103415.63
47	25516.45	26390.02	103423.56
48	25544.58	26421.14	103431.51
49	25572.70	26452.26	103439.46
50	25600.82	26483.39	103447.43
51	25628.94	26514.52	103455.40
52	25657.05	26545.66	103463.38
53	25685.17	26576.80	103471.38
54	25713.28	26607.94	103479.38
55	25741.39	26639.09	103487.40
56	25769.50	26670.25	103495.42
57	25797.60	26701.41	103503.46
58	25825.70	26732.57	103511.50
59	25853.81	26763.74	103519.55
60	25881.90	26794.92	103527.62

	Sinus	Tangens	Secans
30	96814.76	386671.31	399392.92
29	96807.47	386207.82	398944.21
28	96800.18	385745.37	398496.54
27	96792.88	385283.96	398049.91
26	96785.57	384823.58	397604.31
25	96778.25	384364.24	397159.75
24	96770.92	383905.91	396716.21
23	96763.58	383448.61	396273.69
22	96756.23	382992.33	395832.19
21	96748.88	382537.07	395391.71
20	96741.52	382082.81	394952.24
19	96734.15	381629.57	394513.79
18	96726.77	381177.33	394076.33
17	96719.38	380726.09	393639.88
16	96711.99	380275.85	393204.43
15	96704.59	379826.61	392769.97
14	96697.18	379378.35	392336.51
13	96689.76	378931.09	391904.03
12	96682.33	378484.81	391472.54
11	96674.90	378039.51	391042.03
10	96667.46	377595.19	390612.50
9	96660.01	377151.85	390183.95
8	96652.55	376709.47	389756.37
7	96645.08	376268.07	389329.76
6	96637.60	375827.63	388904.11
5	96630.12	375388.15	388479.43
4	96622.63	374949.63	388055.70
3	96615.13	374512.07	387632.93
2	96607.62	374075.46	387211.12
1	96600.10	373639.80	386790.25
0	96592.58	373205.08	386370.33

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15	Sinus	Tangens	Secans
0	25881.90	26794.92	103527.62
1	25910.00	26826.10	103535.69
2	25938.10	26857.28	103543.78
3	25966.19	26888.47	103551.87
4	25994.28	26919.67	103559.98
5	26022.37	26950.87	103568.09
6	26050.45	26982.07	103576.21
7	26078.53	27013.28	103584.35
8	26106.61	27044.49	103592.49
9	26134.69	27075.71	103600.65
10	26162.77	27106.93	103608.81
11	26190.85	27138.16	103616.99
12	26218.92	27169.40	103625.17
13	26246.99	27200.64	103633.37
14	26275.06	27231.88	103641.57
15	26303.12	27263.13	103649.79
16	26331.18	27294.38	103658.01
17	26359.24	27325.64	103666.25
18	26387.30	27356.90	103674.49
19	26415.36	27388.17	103682.75
20	26443.42	27419.44	103691.01
21	26471.47	27450.72	103699.29
22	26499.52	27482.01	103707.57
23	26527.57	27513.30	103715.87
24	26555.61	27544.59	103724.17
25	26583.65	27575.89	103732.49
26	26611.69	27607.19	103740.82
27	26639.73	27638.50	103749.15
28	26667.77	27669.81	103757.50
29	26695.81	27701.13	103765.85
30	26723.84	27732.45	103774.22

	Sinus	Tangens	Secans
60	96592.58	373205.08	386370.33
59	96585.05	372771.31	385951.35
58	96577.51	372338.47	385533.32
57	96569.96	371906.58	385116.22
56	96562.40	371475.61	384700.05
55	96554.83	371045.58	384284.82
54	96547.26	370616.48	383870.51
53	96539.68	370188.30	383457.13
52	96532.09	369761.03	383044.67
51	96524.49	369334.69	382633.13
50	96516.88	368909.27	382222.51
49	96509.27	368484.75	381812.80
48	96501.65	368061.15	381403.99
47	96494.02	367638.45	380996.10
46	96486.38	367216.65	380589.11
45	96478.73	366795.75	380183.01
44	96471.07	366375.75	379777.82
43	96463.41	365956.65	379373.52
42	96455.74	365538.44	378970.11
41	96448.06	365121.11	378567.60
40	96440.37	364704.67	378165.96
39	96432.67	364289.11	377765.22
38	96424.97	363874.44	377365.35
37	96417.26	363460.64	376966.36
36	96409.54	363047.71	376568.24
35	96401.81	362635.66	376171.00
34	96394.07	362224.47	375774.62
33	96386.33	361814.15	375379.11
32	96378.58	361404.69	374984.47
31	96370.82	360996.09	374590.68
30	96363.05	360588.35	374197.75

15	Sinus	Tangens	Secans
30	26723.84	27732.45	103774.22
31	26751.87	27763.78	103782.60
32	26779.89	27795.12	103790.98
33	26807.92	27826.46	103799.38
34	26835.94	27857.80	103807.79
35	26863.96	27889.15	103816.21
36	26891.98	27920.50	103824.63
37	26920.00	27951.86	103833.07
38	26948.01	27983.22	103841.52
39	26976.02	28014.59	103849.98
40	27004.03	28045.97	103858.44
41	27032.04	28077.35	103866.92
42	27060.04	28108.73	103875.41
43	27088.05	28140.12	103883.91
44	27116.05	28171.52	103892.42
45	27144.04	28202.92	103900.94
46	27172.04	28234.32	103909.47
47	27200.03	28265.73	103918.00
48	27228.02	28297.15	103926.55
49	27256.01	28328.57	103935.11
50	27284.00	28359.99	103943.68
51	27311.98	28391.42	103952.26
52	27339.96	28422.86	103960.85
53	27367.94	28454.30	103969.45
54	27395.92	28485.75	103978.06
55	27423.90	28517.20	103986.69
56	27451.87	28548.66	103995.32
57	27479.84	28580.12	104003.96
58	27507.81	28611.59	104012.61
59	27535.78	28643.06	104021.27
60	27563.74	28674.54	104029.94

	Sinus	Tangens	Secans
30	96363.05	360588.35	374197.75
29	96355.27	360181.46	373805.68
28	96347.48	359775.43	373414.46
27	96339.69	359370.24	373024.09
26	96331.89	358965.90	372634.57
25	96324.08	358562.41	372245.89
24	96316.26	358159.75	371858.05
23	96308.43	357757.94	371471.05
22	96300.59	357356.96	371084.89
21	96292.75	356956.81	370699.56
20	96284.90	356557.49	370315.06
19	96277.04	356159.00	369931.39
18	96269.17	355761.33	369548.54
17	96261.30	355364.49	369166.52
16	96253.42	354968.46	368785.32
15	96245.53	354573.25	368404.93
14	96237.63	354178.86	368025.36
13	96229.72	353785.28	367646.60
12	96221.80	353392.51	367268.65
11	96213.87	353000.54	366891.51
10	96205.94	352609.38	366515.18
9	96198.00	352219.02	366139.64
8	96190.05	351829.46	365764.91
7	96182.09	351440.70	365390.97
6	96174.13	351052.73	365017.83
5	96166.16	350665.55	364645.48
4	96158.18	350279.16	364273.92
3	96150.19	349893.56	363903.15
2	96142.19	349508.74	363533.16
1	96134.18	349124.70	363163.95
0	96126.17	348741.44	362795.53

16	Sinus	Tangens	Secans
0	27563.74	28674.54	104029.94
1	27591.70	28706.02	104038.63
2	27619.65	28737.51	104047.32
3	27647.61	28769.00	104056.02
4	27675.56	28800.50	104064.73
5	27703.52	28832.01	104073.46
6	27731.47	28863.52	104082.19
7	27759.41	28895.03	104090.94
8	27787.36	28926.55	104099.69
9	27815.30	28958.08	104108.45
10	27843.24	28989.61	104117.23
11	27871.18	29021.14	104126.01
12	27899.11	29052.68	104134.81
13	27927.04	29084.23	104143.62
14	27954.97	29115.78	104152.43
15	27982.90	29147.34	104161.26
16	28010.83	29178.90	104170.09
17	28038.75	29210.47	104178.94
18	28066.67	29242.05	104187.80
19	28094.59	29273.63	104196.67
20	28122.51	29305.21	104205.54
21	28150.42	29336.80	104214.43
22	28178.33	29368.39	104223.33
23	28206.24	29399.99	104232.24
24	28234.15	29431.60	104241.16
25	28262.05	29463.21	104250.09
26	28289.95	29494.83	104259.03
27	28317.85	29526.45	104267.98
28	28345.75	29558.08	104276.94
29	28373.64	29589.71	104285.91
30	28401.53	29621.35	104294.89

	Sinus	Tangens	Secans
60	96126.17	348741.44	362795.53
59	96118.15	348358.96	362427.88
58	96110.12	347977.26	362061.01
57	96102.08	347596.32	361694.90
56	96094.03	347216.16	361329.57
55	96085.98	346836.76	360965.01
54	96077.92	346458.13	360601.21
53	96069.85	346080.26	360238.18
52	96061.77	345703.15	359875.90
51	96053.68	345326.79	359514.39
50	96045.58	344951.20	359153.63
49	96037.48	344576.35	358793.62
48	96029.37	344202.26	358434.37
47	96021.25	343828.91	358075.86
46	96013.12	343456.31	357718.10
45	96004.98	343084.46	357361.08
44	95996.84	342713.34	357004.81
43	95988.69	342342.97	356649.28
42	95980.53	341973.33	356294.48
41	95972.36	341604.43	355940.42
40	95964.18	341236.26	355587.10
39	95956.00	340868.82	355234.50
38	95947.81	340502.10	354882.63
37	95939.61	340136.12	354531.49
36	95931.40	339770.85	354181.07
35	95923.18	339406.31	353831.38
34	95914.95	339042.49	353482.40
33	95906.72	338679.38	353134.14
32	95898.48	338316.99	352786.60
31	95890.23	337955.31	352439.77
30	95881.97	337594.34	352093.65

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16	Sinus	Tangens	Secans
30	28401.53	29621.35	104294.89
31	28429.42	29652.99	104303.88
32	28457.31	29684.64	104312.89
33	28485.20	29716.30	104321.90
34	28513.08	29747.96	104330.92
35	28540.96	29779.62	104339.95
36	28568.84	29811.29	104349.00
37	28596.71	29842.97	104358.05
38	28624.58	29874.65	104367.12
39	28652.45	29906.34	104376.19
40	28680.32	29938.03	104385.28
41	28708.19	29969.73	104394.37
42	28736.05	30001.44	104403.48
43	28763.91	30033.15	104412.59
44	28791.77	30064.86	104421.72
45	28819.63	30096.58	104430.86
46	28847.48	30128.31	104440.01
47	28875.33	30160.04	104449.17
48	28903.18	30191.78	104458.33
49	28931.03	30223.52	104467.51
50	28958.87	30255.27	104476.70
51	28986.71	30287.03	104485.90
52	29014.55	30318.79	104495.11
53	29042.39	30350.55	104504.33
54	29070.22	30382.32	104513.57
55	29098.05	30414.10	104522.81
56	29125.88	30445.88	104532.06
57	29153.71	30477.67	104541.32
58	29181.53	30509.46	104550.60
59	29209.35	30541.26	104559.88
60	29237.17	30573.07	104569.18

	Sinus	Tangens	Secans
30	95881.97	337594.34	352093.65
29	95873.70	337234.08	351748.24
28	95865.43	336874.53	351403.54
27	95857.15	336515.68	351059.54
26	95848.86	336157.53	350716.25
25	95840.56	335800.08	350373.65
24	95832.25	335443.33	350031.75
23	95823.94	335087.28	349690.55
22	95815.62	334731.91	349350.04
21	95807.29	334377.24	349010.23
20	95798.95	334023.26	348671.10
19	95790.60	333669.97	348332.67
18	95782.25	333317.36	347994.92
17	95773.89	332965.43	347657.85
16	95765.52	332614.19	347321.46
15	95757.14	332263.62	346985.76
14	95748.75	331913.73	346650.73
13	95740.35	331564.52	346316.37
12	95731.95	331215.98	345982.69
11	95723.54	330868.11	345649.69
10	95715.12	330520.91	345317.35
9	95706.69	330174.38	344985.68
8	95698.25	329828.51	344654.67
7	95689.81	329483.30	344324.33
6	95681.36	329138.76	343994.65
5	95672.90	328794.87	343665.63
4	95664.43	328451.64	343337.27
3	95655.95	328109.07	343009.56
2	95647.47	327767.15	342682.51
1	95638.98	327425.88	342356.11
0	95630.48	327085.26	342030.36

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17	Sinus	Tangens	Secans
0	29237.17	30573.07	104569.18
1	29264.99	30604.88	104578.48
2	29292.80	30636.69	104587.80
3	29320.61	30668.51	104597.12
4	29348.42	30700.34	104606.46
5	29376.23	30732.18	104615.81
6	29404.03	30764.02	104625.16
7	29431.83	30795.86	104634.53
8	29459.63	30827.71	104643.91
9	29487.43	30859.57	104653.30
10	29515.22	30891.43	104662.70
11	29543.01	30923.30	104672.11
12	29570.80	30955.17	104681.53
13	29598.59	30987.05	104690.96
14	29626.38	31018.93	104700.40
15	29654.16	31050.82	104709.86
16	29681.94	31082.72	104719.32
17	29709.71	31114.62	104728.79
18	29737.49	31146.53	104738.28
19	29765.26	31178.44	104747.77
20	29793.03	31210.36	104757.28
21	29820.79	31242.29	104766.79
22	29848.56	31274.22	104776.32
23	29876.32	31306.16	104785.86
24	29904.08	31338.10	104795.40
25	29931.84	31370.05	104804.96
26	29959.59	31402.00	104814.53
27	29987.34	31433.96	104824.11
28	30015.09	31465.93	104833.70
29	30042.84	31497.90	104843.30
30	30070.58	31529.88	104852.91

	Sinus	Tangens	Secans
60	95630.48	327085.26	342030.36
59	95621.97	326745.29	341705.26
58	95613.45	326405.96	341380.80
57	95604.92	326067.28	341056.99
56	95596.39	325729.24	340733.82
55	95587.85	325391.84	340411.30
54	95579.30	325055.08	340089.41
53	95570.74	324718.95	339768.16
52	95562.17	324383.46	339447.54
51	95553.60	324048.60	339127.55
50	95545.02	323714.38	338808.20
49	95536.43	323380.78	338489.48
48	95527.83	323047.80	338171.38
47	95519.22	322715.46	337853.91
46	95510.61	322383.73	337537.07
45	95501.99	322052.63	337220.84
44	95493.36	321722.15	336905.24
43	95484.72	321392.28	336590.26
42	95476.07	321063.04	336275.89
41	95467.42	320734.40	335962.14
40	95458.76	320406.38	335649.00
39	95450.09	320078.97	335336.47
38	95441.41	319752.17	335024.55
37	95432.72	3[illegible]425.98	334713.24
36	95424.03	319100.39	334402.54
35	95415.33	318775.40	334092.44
34	95406.62	318451.02	333782.94
33	95397.90	318127.24	333474.05
32	95389.17	317804.06	333165.75
31	95380.43	317481.47	332858.05
30	95371.69	317159.48	332550.95

17	Sinus	Tangens	Secans
30	30070.58	31529.88	104852.91
31	30098.32	31561.86	104862.53
32	30126.06	31593.85	104872.17
33	30153.80	31625.85	104881.81
34	30181.53	31657.85	104891.46
35	30209.26	31689.86	104901.13
36	30236.99	31721.87	104910.80
37	30264.71	31753.89	104920.49
38	30292.44	31785.91	104930.19
39	30320.16	31817.94	104939.89
40	30347.88	31849.98	104949.61
41	30375.59	31882.02	104959.34
42	30403.31	31914.07	104969.08
43	30431.02	31946.13	104978.83
44	30458.72	31978.19	104988.59
45	30486.43	32010.25	104998.36
46	30514.13	32042.32	105008.15
47	30541.83	32074.40	105017.94
48	30569.53	32106.49	105027.74
49	30597.23	32138.58	105037.56
50	30624.92	32170.67	105047.38
51	30652.61	32202.77	105057.22
52	30680.29	32234.88	105067.06
53	30707.98	32[illegible].00	105076.92
54	30735.66	32299.12	105086.79
55	30763.34	32331.25	105096.67
56	30791.02	32363.38	105106.56
57	30818.69	32395.52	105116.46
58	30846.36	32427.66	105126.37
59	30874.03	32459.81	105136.29
60	30901.70	32491.97	105146.22

	Sinus	*Tangens*	*Secans*
30	95371.69	317159.48	332550.95
29	95362.94	316838.08	332244.44
28	95354.18	316517.28	331938.53
27	95345.41	316197.06	331633.20
26	95336.64	315877.44	331328.47
25	95327.86	315558.40	331024.32
24	95319.07	315239.94	330720.76
23	95310.27	314922.07	330417.78
22	95301.46	314604.78	330115.39
21	95292.64	314288.07	329813.57
20	95283.82	313971.94	329512.34
19	95274.99	313656.39	329211.68
18	95266.15	313341.41	328911.60
17	95257.30	313027.01	328612.09
16	95248.44	312713.17	328313.16
15	95239.58	312399.91	328014.79
14	95230.71	312087.22	327717.00
13	95221.83	311775.09	327419.77
12	95212.94	311463.53	327123.11
11	95204.04	311152.54	326827.02
10	95195.14	310842.10	326531.49
9	95186.23	310532.23	326236.52
8	95177.31	310222.91	325942.11
7	95168.38	309914.16	325648.25
6	95159.44	309605.96	325354.96
5	95150.49	309298.31	325062.22
4	95141.54	308991.22	324770.03
3	95132.58	308684.68	324478.40
2	95123.61	308378.69	324187.32
1	95114.63	308073.25	323896.78
0	95105.65	307768.35	323606.80
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18	*Sinus*	*Tangens*	*Secans*
0	30901.70	32491.97	105146.22
1	30929.36	32524.13	105156.17
2	30957.02	32556.30	105166.12
3	30984.68	32588.48	105176.08
4	31012.34	32620.66	105186.06
5	31039.99	32652.85	105196.05
6	31067.64	32685.04	105206.04
7	31095.29	32717.24	105216.05
8	31122.94	32749.44	105226.07
9	31150.58	32781.65	105236.10
10	31178.22	32813.87	105246.14
11	31205.86	32846.10	105256.19
12	31233.49	32878.33	105266.25
13	31261.12	32910.56	105276.33
14	31288.75	32942.80	105286.41
15	31316.38	32975.05	105296.51
16	31344.00	33007.31	105306.61
17	31371.63	33039.57	105316.73
18	31399.25	33071.84	105326.86
19	31426.86	33104.11	105336.99
20	31454.48	33136.39	105347.14
21	31482.09	33168.68	105357.30
22	31509.69	33200.97	105367.47
23	31537.30	33233.27	105377.65
24	31564.90	33265.57	105387.85
25	31592.50	33297.88	105398.05
26	31620.10	33330.20	105408.26
27	31647.70	33362.52	105418.49
28	31675.29	33394.85	105428.73
29	31702.88	33427.19	105438.97
30	31730.47	33459.53	105449.23

	Sinus	Tangens	Secans
60	95105.65	307768.35	323606.80
59	95096.66	307464.00	323317.36
58	95087.66	307160.20	323028.46
57	95078.65	306856.93	322740.11
56	95069.63	306554.21	322452.30
55	95060.60	306252.03	322165.03
54	95051.57	305950.38	321878.30
53	95042.53	305649.28	321592.10
52	95033.48	305348.70	321306.44
51	95024.42	305048.66	321021.32
50	95015.36	304749.15	320736.73
49	95006.29	304450.18	320452.66
48	94997.21	304151.73	320169.13
47	94988.12	303853.81	319886.13
46	94979.02	303556.41	319603.65
45	94969.91	303259.54	319321.70
44	94960.80	302963.20	319040.28
43	94951.68	302667.37	318759.37
42	94942.55	302372.07	318478.99
41	94933.41	302077.28	318199.13
40	94924.26	301783.01	317919.78
39	94915.11	301489.26	317640.95
38	94905.95	301196.02	317362.64
37	94896.78	300903.30	317084.84
36	94887.60	300611.09	316807.56
35	94878.41	300319.39	316530.78
34	94869.22	300028.20	316254.52
33	94860.02	299737.51	315978.76
32	94850.81	299447.34	315703.51
31	94841.59	299157.66	315428.77
30	94832.36	298868.50	315154.53

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18	*Sinus*	*Tangens*	*Secans*
30	31730.47	33459.53	105449.23
31	31758.05	33491.88	105459.50
32	31785.63	33524.24	105469.78
33	31813.21	33556.60	105480.07
34	31840.79	33588.97	105490.37
35	31868.36	33621.34	105500.68
36	31895.93	33653.72	105511.01
37	31923.50	33686.11	105521.34
38	31951.06	33718.50	105531.69
39	31978.63	33750.90	105542.04
40	32006.19	33783.30	105552.41
41	32033.74	33815.71	105562.79
42	32061.30	33848.13	105573.18
43	32088.85	33880.56	105583.58
44	32116.40	33912.99	105593.99
45	32143.95	33945.43	105604.41
46	32171.49	33977.87	105614.85
47	32199.03	34010.32	105625.29
48	32226.57	34042.78	105635.75
49	32254.10	34075.24	105646.21
50	32281.64	34107.71	105656.69
51	32309.17	34140.19	105667.18
52	32336.70	34172.67	105677.68
53	32364.22	34205.16	105688.19
54	32391.74	34237.65	105698.71
55	32419.26	34270.15	105709.24
56	32446.78	34302.66	105719.78
57	32474.29	34335.18	105730.34
58	32501.80	34367.70	105740.90
59	32529.31	34400.23	105751.48
60	32556.82	34432.76	105762.07

	Sinus	Tangens	Secans
30	94832.36	298868.50	315154.53
29	94823.13	298579.83	314880.79
28	94813.89	298291.66	314607.56
27	94804.64	298004.00	314334.83
26	94795.38	297716.83	314062.59
25	94786.11	297430.16	313790.86
24	94776.84	297143.99	313519.62
23	94767.56	296858.31	313248.87
22	94758.27	296573.12	312978.62
21	94748.97	296288.42	312708.86
20	94739.66	296004.22	312439.59
19	94730.35	295720.50	312170.81
18	94721.03	295437.27	311902.52
17	94711.70	295154.53	311634.72
16	94702.36	294872.27	311367.40
15	94693.01	294590.50	311100.57
14	94683.66	294309.21	310834.22
13	94674.30	294028.40	310568.35
12	94664.93	293748.07	310302.96
11	94655.55	293468.22	310038.05
10	94646.16	293188.85	309773.63
9	94636.76	292909.95	309509.67
8	94627.36	292631.52	309246.20
7	94617.95	292353.58	308983.19
6	94608.53	292076.10	308720.66
5	94599.10	291799.09	308458.60
4	94589.67	291522.56	308197.02
3	94580.23	291246.49	307935.90
2	94570.78	290970.89	307675.25
1	94561.32	290695.76	307415.07
0	94551.85	290421.09	307155.[illegible]

19	Sinus	Tangens	Secans
0	32556.82	34432.76	105762.07
1	32584.32	34465.30	105772.67
2	32611.82	34497.85	105783.28
3	32639.31	34530.40	105793.90
4	32666.81	34562.96	105804.53
5	32694.30	34595.53	105815.17
6	32721.79	34628.10	105825.83
7	32749.28	34660.68	105836.49
8	32776.76	34693.27	105847.17
9	32804.24	34725.86	105857.86
10	32831.72	34758.46	105868.55
11	32859.19	34791.07	105879.26
12	32886.66	34823.68	105889.99
13	32914.13	34856.30	105900.72
14	32941.60	34888.93	105911.46
15	32969.06	34921.56	105922.21
16	32996.52	34954.20	105932.98
17	33023.98	34986.85	105943.76
18	33051.44	35019.50	105954.54
19	33078.89	35052.16	105965.34
20	33106.34	35084.83	105976.15
21	33133.79	35117.50	105986.97
22	33161.23	35150.18	105997.81
23	33188.67	35182.87	106008.65
24	33216.11	35215.56	106019.51
25	33243.55	35248.26	106030.37
26	33270.98	35280.97	106041.25
27	33298.41	35313.68	106052.14
28	33325.84	35346.40	106063.04
29	33353.27	35379.13	106073.95
30	33380.69	35411.86	106084.87

	Sinus	Tangens	Secans
60	94551.85	290421.09	307155.35
59	94542.38	290146.88	306896.10
58	94532.90	289873.14	306637.31
57	94523.41	289599.86	306378.98
56	94513.91	289327.04	306121.11
55	94504.40	289054.67	305863.70
54	94494.89	288782.77	305606.75
53	94485.37	288511.32	305350.26
52	94475.84	288240.33	305094.23
51	94466.30	287969.79	304838.64
50	94456.75	287699.70	304583.52
49	94447.20	287430.07	304328.84
48	94437.64	287160.88	304074.62
47	94428.07	286892.15	303820.84
46	94418.49	286623.86	303567.52
45	94408.90	286356.02	303314.64
44	94399.31	286088.63	303062.21
43	94389.71	285821.68	302810.23
42	94380.10	285555.17	302558.68
41	94370.48	285289.11	302307.59
40	94360.85	285023.49	302056.93
39	94351.21	284758.31	301806.72
38	94341.57	284493.56	301556.94
37	94331.92	284229.26	301307.60
36	94322.26	283965.39	301058.70
35	94312.60	283701.96	300810.24
34	94302.93	283438.96	300562.21
33	94293.25	283176.39	300314.62
32	94283.56	282914.26	300067.46
31	94273.86	282652.56	299820.73
30	94264.15	282391.29	299574.43

19	Sinus	Tangens	Secans
30	33380.69	35411.86	106084.87
31	33408.10	35444.60	106095.80
32	33435.52	35477.35	106106.75
33	33462.93	35510.10	106117.70
34	33490.34	35542.86	106128.67
35	33517.75	35575.63	106139.65
36	33545.16	35608.40	106150.64
37	33572.56	35641.18	106161.64
38	33599.96	35673.97	106172.65
39	33627.35	35706.76	106183.67
40	33654.75	35739.56	106194.71
41	33682.14	35772.37	106205.75
42	33709.53	35805.18	106216.81
43	33736.91	35838.00	106227.88
44	33764.29	35870.83	106238.96
45	33791.67	35903.67	106250.05
46	33819.05	35936.51	106261.15
47	33846.42	35969.36	106272.27
48	33873.79	36002.22	106283.39
49	33901.16	36035.08	106294.53
50	33928.53	36067.95	106305.68
51	33955.89	36100.83	106316.84
52	33983.25	36133.71	106328.01
53	34010.60	36166.60	106339.19
54	34037.95	36199.50	106350.38
55	34065.30	36232.40	106361.58
56	34092.65	36265.31	106372.80
57	34120.00	36298.23	106384.03
58	34147.34	36331.15	106395.27
59	34174.68	36364.08	106406.52
60	34202.02	36397.02	106417.78

	Sinus	Tangens	Secans
30	94264.15	282391.29	299574.43
29	94254.43	282130.45	299328.56
28	94244.71	281870.03	299083.12
27	94234.98	281610.04	298838.11
26	94225.24	281350.48	298593.52
25	94215.50	281091.34	298349.36
24	94205.75	280832.63	298105.63
23	94195.99	280574.33	297862.31
22	94186.22	280316.46	297619.42
21	94176.44	280059.01	297376.95
20	94166.65	279801.98	297134.90
19	94156.85	279545.37	296893.27
18	94147.05	279289.17	296652.05
17	94137.24	279033.39	296411.25
16	94127.42	278778.02	296170.87
15	94117.60	278523.07	295930.90
14	94107.77	278268.53	295691.35
13	94097.93	278014.40	295452.21
12	94088.08	277760.69	295213.48
11	94078.22	277507.38	294975.16
10	94068.35	277254.48	294737.25
9	94058.48	277001.99	294499.75
8	94048.60	276749.90	294262.65
7	94038.71	276498.22	294025.97
6	94028.81	276246.95	293789.68
5	94018.90	275996.08	293553.80
4	94008.99	275745.61	293318.33
3	93999.07	275495.54	293082.26
2	93989.14	275245.88	292848.58
1	93979.20	274996.61	292614.31
0	93969.26	274747.74	292380.44

20	*Sinus*	*Tangens*	*Secans*
0	34202.02	36397.02	106417.78
1	34229.35	36429.97	106429.05
2	34256.68	36462.92	106440.33
3	34284.01	36495.88	106451.63
4	34311.33	36528.85	106462.94
5	34338.65	36561.82	106474.26
6	34365.97	36594.80	106485.59
7	34393.29	36627.79	106496.93
8	34420.60	36660.79	106508.28
9	34447.91	36693.79	106519.64
10	34475.22	36726.80	106531.01
11	34502.52	36759.82	106542.40
12	34529.82	36792.84	106553.80
13	34557.12	36825.87	106565.21
14	34584.42	36858.91	106576.63
15	34611.71	36891.95	106588.07
16	34639.00	36925.00	106599.51
17	34666.29	36958.06	106610.97
18	34693.57	36991.13	106622.43
19	34720.85	37024.20	106633.91
20	34748.13	37057.28	106645.40
21	34775.40	37090.37	106656.90
22	34802.67	37123.46	106668.42
23	34829.94	37156.56	106679.94
24	34857.21	37189.67	106691.48
25	34884.47	37222.78	106703.02
26	34911.73	37255.90	106714.58
27	34938.99	37289.03	106726.15
28	34966.24	37322.17	106737.74
29	34993.49	37355.32	106749.34
30	35020.74	37388.47	106760.94

	Sinus	Tangens	Secans
60	93969.26	274747.74	292380.4
59	93959.31	274499.27	292146.9
58	93949.35	274251.20	291913.8
57	93939.38	274003.52	291681.21
56	93929.40	273756.23	291448.92
55	93919.42	273509.34	291217.0
54	93909.43	273262.84	290985.5
53	93899.43	273016.74	290754.43
52	93889.42	272771.02	290523.72
51	93879.40	272525.69	290293.39
50	93869.37	272280.75	290063.46
49	93859.34	272036.20	289833.91
48	93849.30	271792.04	289604.75
47	93839.25	271548.26	289375.98
46	93829.19	271304.87	289147.60
45	93819.13	271061.86	288919.59
44	93809.06	270819.23	288691.98
43	93798.98	270576.99	288464.74
42	93788.89	270335.13	288237.89
41	93778.79	270093.64	288011.42
40	93768.69	269852.54	287785.32
39	93758.58	269611.81	287559.61
38	93748.46	269371.47	287334.28
37	93738.33	269131.49	287109.32
36	93728.19	268891.90	286884.74
35	93718.05	268652.67	286660.53
34	93707.90	268413.83	286436.70
33	93697.74	268175.35	286213.24
32	93687.57	267937.25	285990.15
31	93677.40	267699.51	285767.44
30	93667.22	267462.15	285545.09

Sinus	Tangens	Secans
35020.74	37388.47	106760.94
35047.99	37421.63	106772.55
35075.23	37454.79	106784.18
35102.47	37487.97	106795.82
35129.70	37521.15	106807.47
35156.93	37554.34	106819.14
35184.16	37587.53	106830.81
35211.39	37620.73	106842.50
35238.62	37653.94	106854.20
35265.84	37687.16	106865.91
35293.06	37720.38	106877.63
35320.27	37753.61	106889.36
35347.48	37786.85	106901.10
35374.69	37820.10	106912.86
35401.90	37853.35	106924.63
35429.10	37886.61	106936.41
35456.30	37919.88	106948.20
35483.50	37953.16	106960.00
35510.70	37986.44	106971.82
35537.89	38019.73	106983.64
35565.08	38053.03	106995.48
35592.26	38086.33	107007.33
35619.44	38119.64	107019.19
35646.62	38152.96	107031.06
35673.80	38186.29	107042.95
35700.97	38219.62	107054.84
35728.14	38252.96	107066.75
35755.31	38286.31	107078.67
35782.48	38319.67	107090.60
35809.64	38353.03	107102.54
35836.79	38386.40	107114.50

Sinus	Tangens	Secans
93667.22	267462.15	285545.09
93657.03	267225.16	285323.12
93646.83	266988.53	285101.52
93636.62	266752.27	284880.28
93626.40	266516.38	284659.41
93616.18	266280.85	284438.91
93605.95	266045.69	284218.77
93595.71	265810.89	283998.99
93585.46	265576.45	283779.58
93575.21	265342.38	283560.54
93564.95	265108.67	283341.85
93554.68	264875.31	283123.53
93544.40	264642.32	282905.56
93534.11	264409.69	282687.96
93523.82	264177.41	282470.71
93513.52	263945.49	282253.82
93503.21	263713.92	282037.29
93492.89	263482.71	281821.11
93482.56	263251.86	281605.29
93472.23	263021.36	281389.82
93461.89	262791.21	281174.71
93451.54	262561.41	280959.95
93441.18	262331.96	280745.54
93430.82	262102.86	280531.48
93420.45	261874.11	280317.77
93410.07	261645.71	280104.41
93399.68	261417.66	279891.40
93389.28	261189.95	279678.73
93378.87	260962.59	279466.41
93368.46	260735.58	279254.44
93358.04	260508.91	279042.81

20	Sinus	Tangens	Secans
30	35020.74	37388.47	106760.94
31	35047.99	37421.63	106772.55
32	35075.23	37454.79	106784.18
33	35102.47	37487.97	106795.82
34	35129.70	37521.15	106807.47
35	35156.93	37554.34	106819.14
36	35184.16	37587.53	106830.81
37	35211.39	37620.73	106842.50
38	35238.62	37653.94	106854.20
39	35265.84	37687.16	106865.91
40	35293.06	37720.38	106877.63
41	35320.27	37753.61	106889.36
42	35347.48	37786.85	106901.10
43	35374.69	37820.10	106912.86
44	35401.90	37853.35	106924.63
45	35429.10	37886.61	106936.41
46	35456.30	37919.88	106948.20
47	35483.50	37953.16	106960.00
48	35510.70	37986.44	106971.82
49	35537.89	38019.73	106983.64
50	35565.08	38053.03	106995.48
51	35592.26	38086.33	107007.33
52	35619.44	38119.64	107019.19
53	35646.62	38152.96	107031.06
54	35673.80	38186.29	107042.95
55	35700.97	38219.62	107054.84
56	35728.14	38252.96	107066.75
57	35755.31	38286.31	107078.67
58	35782.48	38319.67	107090.60
59	35809.64	38353.03	107102.54
60	35836.79	38386.40	107114.50

	Sinus	Tangens	Secans
30	93667.22	267462.15	285545.0
29	93657.03	267225.16	285323.1
28	93646.83	266988.53	285101.5
27	93636.62	266752.27	284880.2
26	93626.40	266516.38	284659.4
25	93616.18	266280.85	284438.9
24	93605.95	266045.69	284218.7
23	93595.71	265810.89	283998.9
22	93585.46	265576.45	283779.5
21	93575.21	265342.38	283560.5
20	93564.95	265108.67	283341.8
19	93554.68	264875.31	283123.5
18	93544.40	264642.32	282905.56
17	93534.11	264409.69	282687.96
16	93523.82	264177.41	282470.71
15	93513.52	263945.49	282253.82
14	93503.21	263713.92	282037.29
13	93492.89	263482.71	281821.11
12	93482.56	263251.86	281605.29
11	93472.23	263021.36	281389.82
10	93461.89	262791.21	281174.71
9	93451.54	262561.41	280959.95
8	93441.18	262331.96	280745.54
7	93430.82	262102.86	280531.48
6	93420.45	261874.11	280317.77
5	93410.07	261645.71	280104.41
4	93399.68	261417.66	279891.40
3	93389.28	261189.95	279678.73
2	93378.87	260962.59	279466.41
1	93368.46	260735.58	279254.44
0	93358.04	260508.91	279042.81

I	Sinus	Tangens	Secans
0	35836.79	38386.40	107114.50
1	35863.95	38419.78	107126.47
2	35891.10	38453.17	107138.44
3	35918.25	38486.56	107150.43
4	35945.40	38519.96	107162.44
5	35972.54	38553.37	107174.45
6	35999.68	38586.79	107186.47
7	36026.82	38620.21	107198.51
8	36053.95	38653.64	107210.56
9	36081.08	38687.08	107222.62
10	36108.21	38720.53	107234.69
11	36135.33	38753.98	107246.78
12	36162.46	38787.44	107258.87
13	36189.58	38820.91	107270.98
14	36216.69	38854.39	107283.10
15	36243.80	38887.87	107295.23
16	36270.91	38921.36	107307.37
17	36298.02	38954.86	107319.53
18	36325.12	38988.37	107331.70
19	36352.22	39021.89	107343.88
20	36379.32	39055.41	107356.07
21	36406.41	39088.94	107368.27
22	36433.50	39122.48	107380.48
23	36460.59	39156.02	107392.71
24	36487.68	39189.57	107404.95
25	36514.76	39223.13	107417.20
26	36541.84	39256.70	107429.46
27	36568.92	39290.28	107441.73
28	36595.99	39323.86	107454.02
29	36623.06	39357.45	107466.31
30	36650.13	39391.05	107478.62

	Sinus	*Tangens*	*Secans*
60	93358.04	260508.91	279042.81
59	93347.61	260282.58	278831.53
58	93337.17	260056.59	278620.59
57	93326.73	259830.95	278409.99
56	93316.28	259605.64	278199.73
55	93305.82	259380.68	277989.82
54	93295.35	259156.06	277780.24
53	93284.87	258931.77	277571.00
52	93274.39	258707.82	277362.11
51	93263.90	258484.21	277153.55
50	93253.40	258260.94	276945.32
49	93242.89	258038.00	276737.43
48	93232.38	257815.39	276529.88
47	93221.86	257593.12	276322.66
46	93211.33	257371.18	276115.78
45	93200.79	257149.57	275909.23
44	93190.24	256928.30	275703.01
43	93179.68	256707.35	275497.12
42	93169.12	256486.74	275291.57
41	93158.55	256266.45	275086.34
40	93147.97	256046.49	274881.44
39	93137.38	255826.86	274676.87
38	93126.79	255607.56	274472.63
37	93116.19	255388.58	274268.71
36	93105.58	255169.92	274065.12
35	93094.96	254951.60	273861.86
34	93084.33	254733.59	273658.92
33	93073.70	254515.91	273456.30
32	93063.06	254298.55	273254.00
31	93052.41	254081.51	273052.03
30	93041.75	253864.79	272850.38

21	*Sinus*	*Tangens*	*Secans*
30	36650.13	39391.05	107478.62
31	36677.19	39424.66	107490.95
32	36704.25	39458.27	107503.28
33	36731.31	39491.89	107515.62
34	36758.36	39525.52	107527.98
35	36785.41	39559.16	107540.35
36	36812.46	39592.80	107552.73
37	36839.50	39626.45	107565.12
38	36866.54	39660.11	107577.53
39	36893.58	39693.78	107589.95
40	36920.62	39727.46	107602.37
41	36947.65	39761.14	107614.81
42	36974.68	39794.83	107627.27
43	37001.70	39828.53	107639.73
44	37028.72	39862.24	107652.21
45	37055.74	39895.96	107664.70
46	37082.76	39929.68	107677.20
47	37109.77	39963.41	107689.71
48	37136.78	39997.15	107702.24
49	37163.79	40030.89	107714.77
50	37190.80	40064.65	107727.32
51	37217.80	40098.41	107739.88
52	37244.80	40132.18	107752.46
53	37271.79	40165.96	107765.04
54	37298.78	40199.75	107777.64
55	37325.77	40233.54	107790.25
56	37352.75	40267.34	107802.87
57	37379.73	40301.15	107815.50
58	37406.71	40334.97	107828.15
59	37433.69	40368.79	107840.80
60	37460.66	40402.62	107853.47

	Sinus	Tangens	Secans
30	93041.75	253864.79	272850.38
29	93031.09	253648.39	272649.05
28	93020.42	253432.31	272448.04
27	93009.74	253216.55	272247.35
26	92999.05	253001.11	272046.98
25	92988.35	252785.98	271846.93
24	92977.65	252571.17	271647.19
23	92966.94	252356.67	271447.77
22	92956.22	252142.49	271248.66
21	92945.49	251928.63	271049.87
20	92934.75	251715.07	270851.39
19	92924.01	251501.83	270653.23
18	92913.26	251288.90	270455.38
17	92902.50	251076.29	270257.84
16	92891.73	250863.98	270060.61
15	92880.95	250651.98	269863.70
14	92870.17	250440.29	269667.09
13	92859.38	250228.91	269470.79
12	92848.58	250017.84	269274.80
11	92837.77	249807.07	269079.12
10	92826.96	249596.61	268883.74
9	92816.14	249386.45	268688.67
8	92805.31	249176.60	268493.91
7	92794.47	248967.06	268299.45
6	92783.62	248757.81	268105.30
5	92772.77	248548.87	267911.45
4	92761.91	248340.23	267717.90
3	92751.04	248131.90	267524.65
2	92740.16	247923.86	267331.70
1	92729.28	247716.12	267139.06
0	92718.39	247508.69	266946.72

Sinus	Tangens	Secans
37460.66	40402.62	107853.47
37487.63	40436.46	107866.16
37514.59	40470.31	107878.85
37541.56	40504.17	107891.56
37568.52	40538.04	107904.27
37595.47	40571.91	107917.00
37622.43	40605.79	107929.75
37649.38	40639.68	107942.50
37676.32	40673.58	107955.27
37703.27	40707.48	107968.05
37730.21	40741.39	107980.84
37757.14	40775.31	107993.64
37784.08	40809.24	108006.46
37811.01	40843.18	108019.28
37837.94	40877.13	108032.12
37864.86	40911.08	108044.97
37891.78	40945.04	108057.84
37918.70	40979.01	108070.71
37945.62	41012.99	108083.60
37972.53	41046.97	108096.50
37999.44	41080.97	108109.42
38026.34	41114.97	108122.34
38053.24	41148.98	108135.28
38080.14	41183.00	108148.23
38107.04	41217.03	108161.19
38133.92	41251.06	108174.17
38160.82	41285.10	108187.15
38187.70	41319.15	108200.15
38214.59	41353.21	108213.16
38241.47	41387.28	108226.18
38268.34	41421.36	108239.22

	Sinus	Tangens	Secans
60	92718.39	247508.69	266946.72
59	92707.49	247301.55	266754.67
58	92696.58	247094.70	266562.92
57	92685.66	246888.16	266371.48
56	92674.73	246681.91	266180.33
55	92663.80	246475.96	265989.47
54	92652.86	246270.30	265798.91
53	92641.91	246064.94	265608.65
52	92630.96	245859.87	265418.68
51	92620.00	245655.09	265229.01
50	92609.03	245450.61	265039.62
49	92598.05	245246.42	264850.54
48	92587.06	245042.52	264661.74
47	92576.06	244838.91	264473.23
46	92565.06	244635.59	264285.02
45	92554.05	244432.56	264097.09
44	92543.03	244229.82	263909.46
43	92532.00	244027.36	263722.11
42	92520.97	243825.19	263535.05
41	92509.93	243623.31	263348.28
40	92498.88	243421.72	263161.80
39	92487.82	243220.41	262975.60
38	92476.75	243019.38	262789.69
37	92465.68	242818.64	262604.06
36	92454.60	242618.19	262418.72
35	92443.51	242418.01	262233.66
34	92432.41	242218.12	262048.88
33	92421.31	242018.51	261864.39
32	92410.20	241819.18	261680.18
31	92399.08	241620.13	261496.24
30	92387.95	241421.36	261312.59

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22	Sinus	Tangens	Secans
30	38268.34	41421.36	108239.22
31	38295.22	41455.44	108252.27
32	38322.09	41489.53	108265.33
33	38348.95	41523.63	108278.40
34	38375.82	41557.74	108291.49
35	38402.68	41591.86	108304.58
36	38429.53	41625.99	108317.69
37	38456.39	41660.12	108330.81
38	38483.24	41694.26	108343.95
39	38510.08	41728.41	108357.09
40	38536.93	41762.57	108370.25
41	38563.77	41796.74	108383.42
42	38590.60	41830.91	108396.61
43	38617.44	41865.09	108409.80
44	38644.27	41899.28	108423.01
45	38671.10	41933.48	108436.23
46	38697.92	41967.69	108449.47
47	38724.74	42001.91	108462.71
48	38751.56	42036.13	108475.97
49	38778.37	42070.36	108489.24
50	38805.18	42104.60	108502.52
51	38831.99	42138.85	108515.82
52	38858.80	42173.11	108529.13
53	38885.60	42207.38	108542.45
54	38912.39	42241.66	108555.78
55	38939.19	42275.94	108569.12
56	38965.98	42310.23	108582.48
57	38992.77	42344.53	108595.85
58	39019.55	42378.84	108609.24
59	39046.33	42413.16	108622.63
60	39073.11	42447.49	108636.04

	Sinus	*Tangens*	*Secans*
30	92387.95	241421.36	261312.59
29	92376.81	241222.86	261129.22
28	92365.67	241024.65	260946.13
27	92354.52	240826.72	260763.32
26	92343.36	240629.06	260580.78
25	92332.19	240431.68	260398.52
24	92321.02	240234.57	260216.54
23	92309.84	240037.74	260034.84
22	92298.65	239841.18	259853.41
21	92287.45	239644.90	259672.25
20	92276.24	239448.89	259491.37
19	92265.03	239253.16	259310.77
18	92253.81	239057.69	259130.43
17	92242.58	238862.50	258950.37
16	92231.34	238667.58	258770.58
15	92220.09	238472.93	258591.07
14	92208.84	238278.55	258411.82
13	92197.58	238084.44	258232.84
12	92186.31	237890.60	258054.14
11	92175.03	237697.03	257875.70
10	92163.75	237503.72	257697.53
9	92152.46	237310.68	257519.63
8	92141.16	237117.91	257341.99
7	92129.85	236925.40	257164.62
6	92118.54	236733.16	256987.52
5	92107.22	236541.18	256810.69
4	92095.89	236349.46	256634.12
3	92084.55	236158.01	256457.81
2	92073.20	235966.83	256281.76
1	92061.85	235775.90	256105.99
0	92050.49	235585.24	255930.47

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23	Sinus	Tangens	Secans
0	39073.11	42447.49	108636.04
1	39099.89	42481.82	108649.46
2	39126.66	42516.16	108662.89
3	39153.43	42550.51	108676.34
4	39180.19	42584.87	108689.79
5	39206.95	42619.24	108703.26
6	39233.71	42653.62	108716.75
7	39260.47	42688.00	108730.24
8	39287.22	42722.39	108743.75
9	39313.97	42756.79	108757.27
10	39340.71	42791.20	108770.80
11	39367.45	42825.62	108784.35
12	39394.19	42860.05	108797.91
13	39420.93	42894.49	108811.48
14	39447.66	42928.94	108825.06
15	39474.39	42963.39	108838.66
16	39501.11	42997.85	108852.27
17	39527.83	43032.32	108865.89
18	39554.55	43066.80	108879.52
19	39581.27	43101.29	108893.17
20	39607.98	43135.79	108906.83
21	39634.69	43170.30	108920.50
22	39661.39	43204.81	108934.18
23	39688.09	43239.33	108947.88
24	39714.79	43273.86	108961.59
25	39741.48	43308.40	108975.31
26	39768.17	43342.95	108989.04
27	39794.86	43377.51	109002.79
28	39821.55	43412.08	109016.55
29	39848.23	43446.66	109030.32
30	39874.91	43481.24	109044.11

	Sinus	Tangens	Secans
60	92050.49	235585.24	255930.4
59	92039.12	235394 83	255755.2
58	92027.74	235204.69	255580.2
57	92016.35	235014.81	255405.4
56	92004.96	234825.19	255231.0
55	91993.56	234635.82	255056.8
54	91982.15	234446.72	254882.8
53	91970.73	234257.87	254709.1
52	91959.31	234069.28	254535.7
51	91947.88	233880.95	254362.5
50	91936.44	233692.87	254189.61
49	91924.99	233505.05	254016.94
48	91913.53	233317.48	253844.53
47	91902.07	233130.17	253672.38
46	91890.60	232943.11	253500.48
45	91879.12	232756.30	253328.83
44	91867.63	232569.75	253157.44
43	91856.14	232383.45	252986.30
42	91844.64	232197.40	252815.41
41	91833.13	232011.60	252644.78
40	91821.61	231826.06	252474.40
39	91810.08	231640.76	252304.26
38	91798.55	231455.71	252134.38
37	91787.01	231270.91	251964.75
36	91775.46	231086.36	251795.37
35	91763.90	230902.06	251626.24
34	91752.34	230718.01	251457.35
33	91740.77	230534.20	251288.71
32	91729.19	230350.64	251120.32
31	91717.60	230167.32	250952.18
30	91706.01	229984.25	250784.28

23	Sinus	Tangens	Secans
30	39874.91	43481.24	109044.11
31	39901.58	43515.83	109057.91
32	39928.25	43550.43	109071.72
33	39954.92	43585.04	109085.54
34	39981.58	43619.66	109099.38
35	40008.24	43654.29	109113.23
36	40034.90	43688.93	109127.09
37	40061.56	43723.58	109140.97
38	40088.21	43758.23	109154.86
39	40114.86	43792.89	109168.76
40	40141.50	43827.56	109182.67
41	40168.14	43862.24	109196.59
42	40194.78	43896.93	109210.53
43	40221.41	43931.63	109224.48
44	40248.04	43966.34	109238.45
45	40274.67	44001.06	109252.43
46	40301.29	44035.78	109266.42
47	40327.91	44070.51	109280.42
48	40354.53	44105.25	109294.44
49	40381.14	44140.00	109308.47
50	40407.75	44174.76	109322.51
51	40434.36	44209.53	109336.56
52	40460.96	44244.31	109350.63
53	40487.56	44279.10	109364.71
54	40514.16	44313.90	109378.80
55	40540.75	44348.71	109392.91
56	40567.34	44383.53	109407.03
57	40593.93	44418.35	109421.16
58	40620.51	44453.18	109435.30
59	40647.09	44488.02	109449.46
60	40673.66	44522.87	109463.63

	Sinus	*Tangens*	*Secans*
30	91706.01	229984.25	250784.28
29	91694.41	229801.41	250616.6
28	91682.80	229618.85	250449.2
27	91671.18	229436.51	250282.07
26	91659.55	229254.42	250115.15
25	91647.91	229072.57	249948.47
24	91636.27	228890.96	249782.04
23	91624.62	228709.59	249615.86
22	91612.96	228528.46	249449.91
21	91601.30	228347.58	249284.21
20	91589.63	228166.93	249118.74
19	91577.95	227986.53	248953.52
18	91566.26	227806.36	248788.54
17	91554.56	227626.43	248623.80
16	91542.86	227446.74	248459.29
15	91531.15	227267.29	248295.03
14	91519.43	227088.07	248131.00
13	91507.70	226909.09	247967.21
12	91495.96	226730.35	247803.66
11	91484.22	226551.84	247640.34
10	91472.47	226373.57	247477.26
9	91460.71	226195.53	247314.42
8	91448.95	226017.73	247151.81
7	91437.18	225840.16	246989.43
6	91425.40	225662.83	246827.29
5	91413.61	225485.72	246665.38
4	91401.81	225308.85	246503.71
3	91390.00	225132.21	246342.27
2	91378.19	224955.80	246181.06
1	91366.37	224779.62	246020.08
0	91354.54	224603.68	245859.33
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4	Sinus	Tangens	Secans
0	40673.66	44522.87	109463.63
1	40700.2	44557.73	109477.81
2	40726.80	44592.60	109492.01
3	40753.37	44627.48	109506.22
4	40779.93	44662.37	109520.44
5	40806.49	44697.27	109534.67
6	40833.05	44732.17	109548.92
7	40859.60	44767.08	109563.18
8	40886.15	44802.00	109577.46
9	40912.69	44836.93	109591.74
10	40939.23	44871.87	109606.04
11	40965.77	44906.82	109620.36
12	40992.30	44941.78	109634.68
13	41018.83	44976.75	109649.02
14	41045.36	45011.73	109663.37
15	41071.89	45046.72	109677.74
16	41098.41	45081.72	109692.12
17	41124.93	45116.73	109706.51
18	41151.44	45151.74	109720.91
19	41177.95	45186.76	109735.33
20	41204.46	45221.79	109749.76
21	41230.96	45256.83	109764.20
22	41257.46	45291.88	109778.66
23	41283.95	45326.94	109793.13
24	41310.44	45362.01	109807.61
25	41336.93	45397.09	109822.11
26	41363.42	45432.18	109836.62
27	41389.90	45467.28	109851.14
28	41416.38	45502.39	109865.68
29	41442.85	45537.51	109880.23
30	41469.32	45572.64	109894.79

	Sinus	Tangens	Secans
60	91354.54	224603.68	245859.33
59	91342.71	224427.96	245698.82
58	91330.87	224252.47	245538.53
57	91319.02	224077.21	245378.48
56	91307.16	223902.18	245218.65
55	91295.29	223727.38	245059.05
54	91283.42	223552.80	244899.68
53	91271.54	223378.45	244740.54
52	91259.65	223204.33	244581.63
51	91247.75	223030.43	244422.94
50	91235.84	222856.76	244264.48
49	91223.93	222683.31	244106.24
48	91212.01	222510.09	243948.23
47	91200.08	222337.09	243790.45
46	91188.14	222164.32	243632.89
45	91176.20	221991.77	243475.55
44	91164.25	221819.44	243318.44
43	91152.29	221647.33	243161.55
42	91140.32	221475.45	243004.89
41	91128.35	221303.79	242848.44
40	91116.37	221132.34	242692.22
39	91104.38	220961.12	242536.22
38	91092.38	220790.12	242380.44
37	91080.38	220619.34	242224.88
36	91068.37	220448.78	242069.54
35	91056.35	220278.43	241914.42
34	91044.32	220108.31	241759.52
33	91032.28	219938.40	241604.84
32	91020.24	219768.71	241450.38
31	91008.19	219599.23	241296.13
30	90996.13	219429.97	241142.10

24	Sinus	Tangens	Secans
30	41469.32	45572.64	109894.79
31	41495.79	45607.77	109909.36
32	41522.26	45642.91	109923.95
33	41548.72	45678.06	109938.55
34	41575.18	45713.22	109953.17
35	41601.63	45748.39	109967.79
36	41628.08	45783.57	109982.43
37	41654.53	45818.76	109997.09
38	41680.97	45853.96	110011.76
39	41707.41	45889.17	110026.44
40	41733.85	45924.39	110041.13
41	41760.28	45959.62	110055.84
42	41786.71	45994.86	110070.56
43	41813.13	46030.11	110085.29
44	41839.55	46065.37	110100.04
45	41865.97	46100.64	110114.80
46	41892.39	46135.91	110129.57
47	41918.80	46171.19	110144.36
48	41945.21	46206.48	110159.16
49	41971.61	46241.78	110173.97
50	41998.01	46277.09	110188.79
51	42024.41	46312.42	110203.63
52	42050.80	46347.76	110218.49
53	42077.19	46383.11	110233.35
54	42103.58	46418.46	110248.23
55	42129.96	46453.82	110263.13
56	42156.34	46489.19	110278.03
57	42182.72	46524.57	110292.95
58	42209.09	46559.96	110307.89
59	42235.46	46595.36	110322.83
60	42261.83	46630.77	110337.79

	Sinus	Tangens	Secans
30	90996.13	219429.97	241142.10
29	90984.06	219260.93	240988.29
28	90971.98	219092.10	240834.69
27	90959.90	218923.49	240681.32
26	90947.81	218755.10	240528.15
25	90935.71	218586.91	240375.20
24	90923.61	218418.94	240222.47
23	90911.50	218251.19	240069.95
22	90899.38	218083.64	239917.64
21	90887.25	217916.31	239765.55
20	90875.11	217749.20	239613.67
19	90862.97	217582.29	239462.01
18	90850.82	217415.59	239310.55
17	90838.66	217249.11	239159.31
16	90826.49	217082.83	239008.28
15	90814.32	216916.77	238857.46
14	90802.14	216750.91	238706.85
13	90789.95	216585.27	238556.45
12	90777.75	216419.83	238406.25
11	90765.54	216254.60	238256.27
10	90753.33	216089.58	238106.50
9	90741.11	215924.76	237956.93
8	90728.88	215760.15	237807.58
7	90716.64	215595.75	237658.43
6	90704.40	215431.56	237509.49
5	90692.15	215267.57	237360.75
4	90679.89	215103.78	237212.22
3	90667.62	214940.20	237063.90
2	90655.35	214776.83	236915.78
1	90643.07	214613.66	236767.87
0	90630.78	214450.69	236620.16

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25	Sinus	Tangens	Secans
0	42261.83	46630.77	110337.79
1	42288.19	46666.19	110352.77
2	42314.55	46701.62	110367.75
3	42340.90	46737.06	110382.75
4	42367.25	46772.51	110397.77
5	42393.60	46807.97	110412.79
6	42419.94	46843.43	110427.83
7	42446.28	46878.90	110442.89
8	42472.62	46914.38	110457.95
9	42498.95	46949.88	110473.03
10	42525.28	46985.39	110488.13
11	42551.61	47020.90	110503.24
12	42577.93	47056.43	110518.36
13	42604.25	47091.96	110533.49
14	42630.56	47127.51	110548.64
15	42656.87	47163.06	110563.80
16	42683.18	47198.63	110578.98
17	42709.49	47234.20	110594.17
18	42735.79	47269.78	110609.37
19	42762.09	47305.38	110624.58
20	42788.38	47340.98	110639.81
21	42814.67	47376.59	110655.06
22	42840.95	47412.22	110670.31
23	42867.23	47447.85	110685.58
24	42893.51	47483.49	110700.87
25	42919.79	47519.14	110716.16
26	42946.06	47554.81	110731.47
27	42972.33	47590.48	110746.80
28	42998.59	47626.16	110762.14
29	43024.85	47661.85	110777.49
30	43051.11	47697.55	110792.85

	Sinus	*Tangens*	*Secans*
60	90630.78	214450.69	236620.16
59	90618.48	214287.93	236472.65
58	90606.17	214125.37	236325.35
57	90593.86	213963.01	236178.26
56	90581.54	213800.85	236031.36
55	90569.21	213638.89	235884.67
54	90556.88	213477.14	235738.18
53	90544.54	213315.59	235591.89
52	90532.19	213154.23	235445.81
51	90519.83	212993.08	235299.92
50	90507.46	212832.13	235154.24
49	90495.09	212671.37	235008.75
48	90482.71	212510.82	234863.47
47	90470.32	212350.46	234718.38
46	90457.92	212190.30	234573.49
45	90445.51	212030.34	234428.80
44	90433.10	211870.57	234284.31
43	90420.68	211711.01	234140.02
42	90408.25	211551.64	233995.93
41	90395.82	211392.46	233852.03
40	90383.38	211233.48	233708.33
39	90370.93	211074.70	233564.82
38	90358.47	210916.11	233421.52
37	90346.00	210757.71	233278.40
36	90333.53	210599.51	233135.48
35	90321.05	210441.50	232992.76
34	90308.56	210283.69	232850.23
33	90296.06	210126.07	232707.90
32	90283.56	209968.64	232565.75
31	90271.05	209811.40	232423.81
30	90258.53	209654.36	232282.05

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25	Sinus	Tangens	Secans
30	43051.11	47697.55	110792.85
31	43077.36	47733.26	110808.23
32	43103.61	47768.99	110823.63
33	43129.86	47804.72	110839.03
34	43156.10	47840.46	110854.45
35	43182.34	47876.21	110869.89
36	43208.57	47911.97	110885.33
37	43234.80	47947.74	110900.79
38	43261.03	47983.52	110916.27
39	43287.26	48019.32	110931.76
40	43313.48	48055.12	110947.26
41	43339.70	48090.93	110962.77
42	43365.91	48126.75	110978.30
43	43392.12	48162.58	110993.85
44	43418.33	48198.42	111009.41
45	43444.53	48234.27	111024.98
46	43470.73	48270.14	111040.56
47	43496.92	48306.01	111056.16
48	43523.11	48341.89	111071.77
49	43549.30	48377.78	111087.40
50	43575.48	48413.68	111103.04
51	43601.66	48449.59	111118.69
52	43627.84	48485.52	111134.36
53	43654.01	48521.45	111150.04
54	43680.18	48557.39	111165.73
55	43706.34	48593.34	111181.44
56	43732.50	48629.31	111197.16
57	43758.66	48665.28	111212.90
58	43784.82	48701.26	111228.65
59	43810.97	48737.26	111244.42
60	43837.12	48773.26	111260.19

	Sinus	Tangens	Secans
30	90258.53	209654.36	232282.05
29	90246.00	209497.51	232140.49
28	90233.47	209340.84	231999.11
27	90220.93	209184.37	231857.94
26	90208.38	209028.09	231716.95
25	90195.82	208872.00	231576.15
24	90183.25	208716.10	231435.54
23	90170.68	208560.39	231295.13
22	90158.10	208404.86	231154.90
21	90145.51	208249.53	231014.86
20	90132.91	208094.38	230875.01
19	90120.31	207939.42	230735.35
18	90107.70	207784.65	230595.88
17	90095.08	207630.07	230456.60
16	90082.45	207475.67	230317.51
15	90069.82	207321.46	230178.60
14	90057.18	207167.43	230039.88
13	90044.53	207013.59	229901.34
12	90031.87	206859.93	229762.99
11	90019.21	206706.46	229624.83
10	90006.54	206553.18	229486.85
9	89993.86	206400.08	229349.06
8	89981.17	206247.16	229211.45
7	89968.48	206094.42	229074.03
6	89955.78	205941.87	228936.79
5	89943.07	205789.50	228799.74
4	89930.35	205637.32	228662.86
3	89917.62	205485.31	228526.18
2	89904.89	205333.49	228389.67
1	89892.15	205181.84	228253.34
0	89879.40	205030.38	228117.20

26	Sinus	Tangens	Secans
0	43837.12	48773.26	111260.19
1	43863.26	48809.27	111275.98
2	43889.40	48845.30	111291.79
3	43915.53	48881.33	111307.61
4	43941.66	48917.37	111323.45
5	43967.79	48953.43	111339.30
6	43993.92	48989.49	111355.16
7	44020.04	49025.57	111371.03
8	44046.16	49061.66	111386.92
9	44072.27	49097.75	111402.82
10	44098.38	49133.86	111418.74
11	44124.48	49169.97	111434.67
12	44150.58	49206.10	111450.62
13	44176.68	49242.24	111466.58
14	44202.78	49278.38	111482.55
15	44228.87	49314.54	111498.54
16	44254.96	49350.71	111514.54
17	44281.04	49386.89	111530.56
18	44307.12	49423.08	111546.59
19	44333.20	49459.28	111562.63
20	44359.27	49495.49	111578.69
21	44385.34	49531.71	111594.76
22	44411.40	49567.94	111610.84
23	44437.46	49604.18	111626.94
24	44463.52	49640.43	111643.06
25	44489.57	49676.69	111659.19
26	44515.62	49712.97	111675.33
27	44541.67	49749.25	111691.49
28	44567.71	49785.54	111707.66
29	44593.75	49821.85	111723.84
30	44619.78	49858.16	111740.04

	Sinus	Tangens	Secans
60	89879.40	205030.38	228117.
59	89866.65	204879.10	227981.
58	89853.89	204728.00	227845.4
57	89841.12	204577.08	227709.8
56	89828.34	204426.34	227574.4
55	89815.55	204275.78	227439.2
54	89802.76	204125.40	227304.1
53	89789.96	203975.19	227169.2
52	89777.15	203825.17	227034.5
51	89764.33	203675.32	226900.0
50	89751.51	203525.65	226765.7
49	89738.68	203376.15	226631.5
48	89725.84	203226.83	226497.5
47	89712.99	203077.69	226363.7
46	89700.13	202928.73	226230.1
45	89687.27	202779.94	226096.6
44	89674.40	202631.33	225963.3
43	89661.52	202482.89	225830.2
42	89648.64	202334.62	225697.3
41	89635.75	202186.53	225564.6
40	89622.85	202038.62	225432.0
39	89609.94	201890.88	225299.6
38	89597.03	201743.31	225167.4
37	89584.11	201595.92	225035.3
36	89571.18	201448.69	224903.4
35	89558.24	201301.64	224771.7
34	89545.29	201154.72	224640.2
33	89532.34	201008.06	224508.8
32	89519.38	200861.53	224377.7
31	89506.41	200715.16	224246.6
30	89493.43	200568.97	224115.8

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26	Sinus	Tangens	Secans
30	44619.78	49858.16	111740.04
31	44645.81	49894.49	111756.25
32	44671.84	49930.82	111772.48
33	44697.86	49967.17	111788.72
34	44723.88	50003.52	111804.98
35	44749.90	50039.89	111821.25
36	44775.91	50076.27	111837.53
37	44801.92	50112.66	111853.83
38	44827.92	50149.06	111870.14
39	44853.92	50185.47	111886.47
40	44879.92	50221.89	111902.81
41	44905.91	50258.32	111919.16
42	44931.90	50294.76	111935.53
43	44957.89	50331.21	111951.91
44	44983.87	50367.67	111968.31
45	45009.85	50404.15	111984.72
46	45035.82	50440.63	112001.15
47	45061.79	50477.13	112017.59
48	45087.76	50513.63	112034.05
49	45113.72	50550.15	112050.52
50	45139.68	50586.68	112067.00
51	45165.63	50623.22	112083.50
52	45191.58	50659.77	112100.01
53	45217.53	50696.33	112116.53
54	45243.47	50732.90	112133.07
55	45269.41	50769.48	112149.63
56	45295.35	50806.07	112166.20
57	45321.28	50842.67	112182.78
58	45347.21	50879.28	112199.38
59	45373.13	50915.91	112216.00
60	45399.05	50952.54	112232.62

	Sinus	Tangens	Secans
30	89493.43	200568.97	224115.84
29	89480.45	200422.95	223985.17
28	89467.46	200277.10	223854.67
27	89454.46	200131.42	223724.35
26	89441.45	199985.90	223594.19
25	89428.44	199840.56	223464.20
24	89415.42	199695.39	223334.38
23	89402.39	199550.38	223204.74
22	89389.36	199405.54	223075.26
21	89376.32	199260.87	222945.95
20	89363.27	199116.37	222816.81
19	89350.21	198972.04	222687.83
18	89337.14	198827.87	222559.03
17	89324.06	198683.87	222430.39
16	89310.98	198540.03	222301.92
15	89297.89	198396.36	222173.62
14	89284.79	198252.86	222045.48
13	89271.69	198109.52	221917.51
12	89258.58	197966.35	221789.71
11	89245.46	197823.34	221662.07
10	89232.33	197680.50	221534.60
9	89219.20	197537.82	221407.30
8	89206.06	197395.31	221280.16
7	89192.91	197252.96	221153.18
6	89179.75	197110.77	221026.37
5	89166.59	196968.74	220899.72
4	89153.42	196826.88	220773.23
3	89140.24	196685.18	220646.91
2	89127.05	196543.64	220520.75
1	89113.85	196402.27	220394.76
0	89100.65	196261.05	220268.93

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27	*Sinus*	*Tangens*	*Secans*
0	45399.05	50952.54	112232.62
1	45424.97	50989.19	112249.26
2	45450.88	51025.85	112265.92
3	45476.79	51062.52	112282.59
4	45502.69	51099.19	112299.28
5	45528.59	51135.88	112315.98
6	45554.49	51172.59	112332.69
7	45580.38	51209.30	112349.42
8	45606.27	51246.02	112366.16
9	45632.16	51282.75	112382.92
10	45658.04	51319.50	112399.69
11	45683.92	51356.25	112416.48
12	45709.79	51393.02	112433.28
13	45735.66	51429.80	112450.10
14	45761.53	51466.58	112466.93
15	45787.39	51503.38	112483.77
16	45813.25	51540.19	112500.63
17	45839.10	51577.02	112517.50
18	45864.95	51613.85	112534.39
19	45890.80	51650.69	112551.29
20	45916.64	51687.55	112568.21
21	45942.48	51724.41	112585.14
22	45968.32	51761.29	112602.09
23	45994.15	51798.18	112619.05
24	46019.98	51835.08	112636.03
25	46045.80	51871.99	112653.02
26	46071.62	51908.91	112670.03
27	46097.44	51945 84	112687.05
28	46123.25	51982.78	112704.08
29	46149.06	52019.74	112721.13
30	46174.86	52056.70	112738.19

	Sinus	Tangens	Secans
60	89100.65	196261.05	220268.93
59	89087.44	196120.00	220143.26
58	89074.22	195979.10	220017.75
57	89061.00	195838.37	219892.40
56	89047.77	195697.80	219767.21
55	89034.53	195557.39	219642.19
54	89021.28	195417.13	219517.33
53	89008.02	195277.04	219392.62
52	88994.76	195137.11	219268.08
51	88981.49	194997.33	219143.70
50	88968.21	194857.71	219019.47
49	88954.93	194718.26	218895.41
48	88941.64	194578.96	218771.50
47	88928.34	194439.81	218647.75
46	88915.03	194300.83	218524.17
45	88901.71	194162.00	218400.74
44	88888.39	194023.33	218277.46
43	88875.06	193884.81	218154.35
42	88861.72	193746.45	218031.39
41	88848.37	193608.25	217908.59
40	88835.02	193470.20	217785.94
39	88821.66	193332.31	217663.46
38	88808.29	193194.57	217541.12
37	88794.92	193056.98	217418.95
36	88781.54	192919.56	217296.93
35	88768.15	192782.28	217175.06
34	88754.75	192645.16	217053.35
33	88741.34	192508.19	216931.80
32	88727.93	192371.38	216810.40
31	88714.51	192234.72	216689.15
30	88701.08	192098.21	216568.06

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27	*Sinus*	*Tangens*	*Secans*
30	46174.86	52056.70	112738.19
31	46200.66	52093.68	112755.27
32	46226.46	52130.67	112772.37
33	46252.25	52167.67	112789.48
34	46278.04	52204.68	112806.60
35	46303.82	52241.70	112823.74
36	46329.60	52278.74	112840.89
37	46355.38	52315.78	112858.06
38	46381.15	52352.84	112875.24
39	46406.92	52389.90	112892.44
40	46432.69	52426.98	112909.65
41	46458.45	52464.07	112926.88
42	46484.21	52501.17	112944.12
43	46509.96	52538.29	112961.37
44	46535.71	52575.41	112978.64
45	46561.45	52612.54	112995.93
46	46587.19	52649.69	113013.23
47	46612.93	52686.85	113030.55
48	46638.66	52724.02	113047.88
49	46664.39	52761.20	113065.22
50	46690.12	52798.39	113082.58
51	46715.84	52835.59	113099.96
52	46741.56	52872.81	113117.35
53	46767.27	52910.04	113134.75
54	46792.98	52947.27	113152.17
55	46818.69	52984.52	113169.61
56	46844.39	53021.78	113187.06
57	46870.09	53059.06	113204.52
58	46895.78	53096.34	113222.00
59	46921.47	53133.64	113239.50
60	46947.16	53170.94	113257.01

	Sinus	*Tangens*	*Secans*
30	88701.08	192098.21	216568.06
29	88687.64	191961.86	216447.12
28	88674.20	191825.65	216326.33
27	88660.75	191689.60	216205.70
26	88647.29	191553.70	216085.22
25	88633.83	191417.95	215964.89
24	88620.36	191282.36	215844.71
23	88606.88	191146.91	215724.69
22	88593.39	191011.62	215604.82
21	88579.89	190876.47	215485.10
20	88566.39	190741.47	215365.53
19	88552.88	190606.63	215246.11
18	88539.36	190471.93	215126.84
17	88525.83	190337.38	215007.72
16	88512.30	190202.99	214888.75
15	88498.76	190068.74	214769.93
14	88485.21	189934.64	214651.27
13	88471.66	189800.68	214532.75
12	88458.10	189666.88	214414.37
11	88444.53	189533.22	214296.15
10	88430.95	189399.71	214178.08
9	88417.36	189266.34	214060.15
8	88403.77	189133.13	213942.38
7	88390.17	189000.06	213824.75
6	88376.56	188867.13	213707.26
5	88362.94	188734.36	213589.93
4	88349.32	188601.72	213472.74
3	88335.69	188469.24	213355.70
2	88322.05	188336.90	213238.80
1	88308.41	188204.70	213122.05
0	88294.76	188072.65	213005.45

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28	Sinus	Tangens	Secans
0	46947.16	53170.94	113257.01
1	46972.84	53208.26	113274.53
2	46998.52	53245.59	113292.07
3	47024.19	53282.93	113309.62
4	47049.86	53320.29	113327.19
5	47075.53	53357.65	113344.78
6	47101.19	53395.03	113362.38
7	47126.85	53432.42	113379.99
8	47152.50	53469.82	113397.62
9	47178.15	53507.23	113415.27
10	47203.80	53544.65	113432.93
11	47229.44	53582.08	113450.60
12	47255.08	53619.53	113468.29
13	47280.71	53656.99	113486.00
14	47306.34	53694.46	113503.72
15	47331.97	53731.94	113521.46
16	47357.59	53769.43	113539.21
17	47383.21	53806.94	113556.98
18	47408.82	53844.45	113574.76
19	47434.43	53881.98	113592.55
20	47460.04	53919.52	113610.36
21	47485.64	53957.07	113628.19
22	47511.24	53994.64	113646.03
23	47536.83	54032.21	113663.89
24	47562.42	54069.80	113681.76
25	47588.01	54107.40	113699.65
26	47613.59	54145.01	113717.55
27	47639.17	54182.63	113735.47
28	47664.74	54220.27	113753.40
29	47690.31	54257.91	113771.35
30	47715.88	54295.57	113789.32

	Sinus	Tangens	Secans
60	88294.76	188072.65	213005.45
59	88281.10	187940.74	212888.99
58	88267.43	187808.98	212772.67
57	88253.75	187677.36	212656.51
56	88240.07	187545.88	212540.48
55	88226.38	187414.55	212424.60
54	88212.68	187283.36	212308.87
53	88198.98	187152.31	212193.28
52	88185.27	187021.41	212077.83
51	88171.55	186890.64	211962.53
50	88157.82	186760.03	211847.37
49	88144.09	186629.55	211732.35
48	88130.35	186499.21	211617.48
47	88116.60	186369.02	211502.74
46	88102.84	186238.96	211388.15
45	88089.07	186109.05	211273.71
44	88075.30	185979.28	211159.40
43	88061.52	185849.65	211045.23
42	88047.73	185720.15	210931.21
41	88033.94	185590.80	210817.33
40	88020.14	185461.59	210703.59
39	88006.33	185332.52	210589.98
38	87992.51	185203.58	210476.52
37	87978.69	185074.79	210363.20
36	87964.86	184946.13	210250.02
35	87951.02	184817.61	210136.98
34	87937.17	184689.23	210024.08
33	87923.32	184560.99	209911.31
32	87909.46	184432.89	209798.69
31	87895.59	184304.92	209686.20
30	87881.71	184177.09	209573.85
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28	Sinus	Tangens	Secans
30	47715.88	54295.57	113789.32
31	47741.44	54333.24	113807.30
32	47767.00	54370.92	113825.29
33	47792.55	54408.62	113843.30
34	47818.10	54446.32	113861.33
35	47843.64	54484.04	113879.37
36	47869.18	54521.77	113897.43
37	47894.72	54559.51	113915.50
38	47920.26	54597.26	113933.59
39	47945.79	54635.03	113951.69
40	47971.31	54672.81	113969.81
41	47996.83	54710.60	113987.94
42	48022.35	54748.40	114006.09
43	48047.86	54786.21	114024.25
44	48073.37	54824.04	114042.43
45	48098.88	54861.88	114060.62
46	48124.38	54899.73	114078.83
47	48149.88	54937.59	114097.06
48	48175.37	54975.46	114115.30
49	48200.86	55013.35	114133.56
50	48226.34	55051.25	114151.83
51	48251.82	55089.16	114170.12
52	48277.30	55127.08	114188.42
53	48302.77	55165.02	114206.74
54	48328.24	55202.97	114225.07
55	48353.70	55240.93	114243.42
56	48379.16	55278.90	114261.79
57	48404.62	55316.88	114280.17
58	48430.07	55354.88	114298.57
59	48455.52	55392.88	114316.98
60	48480.96	55430.90	114335.41

	Sinus	Tangens	Secans
30	87881.71	184177.09	209573.8
29	87867.83	184049.39	209461.6
28	87853.94	183921.84	209349.5
27	87840.04	183794.42	209237.6
26	87826.13	183667.13	209125.8
25	87812.22	183539.99	209014.1
24	87798.30	183412.97	208902.6
23	87784.37	183286.10	208791.2
22	87770.43	183159.36	208680.0
21	87756.49	183032.75	208568.9
20	87742.54	182906.28	208457.9
19	87728.58	182779.94	208347.0
18	87714.61	182653.74	208236.3
17	87700.64	182527.67	208125.8
16	87686.66	182401.73	208015.3
15	87672.67	182275.93	207905.0
14	87658.68	182150.26	207794.8
13	87644.68	182024.73	207684.8
12	87630.67	181899.32	207574.9
11	87616.65	181774.05	207465.1
10	87602.62	181648.92	207355.5
9	87588.59	181523.91	207246.0
8	87574.55	181399.04	207136.7
7	87560.50	181274.30	207027.4
6	87546.45	181149.69	206918.3
5	87532.39	181025.21	206809.4
4	87518.32	180900.86	206700.5
3	87504.24	180776.64	206591.8
2	87490.16	180652.56	206483.28
1	87476.07	180528.60	206374.84
0	87461.97	180404.78	206266.5

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29	Sinus	Tangens	Secans
0	48480.96	55430.90	114335.41
1	48506.40	55468.94	114353.85
2	48531.84	55506.98	114372.31
3	48557.27	55545.04	114390.78
4	48582.70	55583.11	114409.27
5	48608.12	55621.19	114427.78
6	48633.54	55659.29	114446.30
7	48658.95	55697.39	114464.84
8	48684.36	55735.51	114483.39
9	48709.77	55773.64	114501.96
10	48735.17	55811.79	114520.55
11	48760.57	55849.94	114539.15
12	48785.97	55888.11	114557.76
13	48811.36	55926.29	114576.39
14	48836.74	55964.48	114595.04
15	48862.12	56002.69	114613.70
16	48887.50	56040.91	114632.38
17	48912.87	56079.14	114651.08
18	48938.24	56117.38	114669.79
19	48963.61	56155.64	114688.52
20	48988.97	56193.91	114707.26
21	49014.33	56232.19	114726.02
22	49039.68	56270.48	114744.79
23	49065.03	56308.79	114763.58
24	49090.37	56347.10	114782.39
25	49115.71	56385.43	114801.21
26	49141.05	56423.78	114820.05
27	49166.38	56462.13	114838.90
28	49191.71	56500.50	114857.77
29	49217.04	56538.88	114876.65
30	49242.36	56577.28	114895.55

	Sinus	Tangens	Secans
60	87461.97	180404.78	206266.53
59	87447.86	180281.08	206158.36
58	87433.75	180157.51	206050.31
57	87419.63	180034.08	205942.39
56	87405.50	179910.77	205834.60
55	87391.36	179787.59	205726.95
54	87377.22	179664.54	205619.42
53	87363.07	179541.62	205512.03
52	87348.91	179418.83	205404.76
51	87334.75	179296.16	205297.62
50	87320.58	179173.62	205190.61
49	87306.40	179051.21	205083.73
48	87292.21	178928.93	204976.98
47	87278.01	178806.78	204870.36
46	87263.81	178684.75	204763.86
45	87249.60	178562.85	204657.50
44	87235.38	178441.07	204551.26
43	87221.16	178319.43	204445.15
42	87206.93	178197.90	204339.16
41	87192.69	178076.51	204233.30
40	87178.44	177955.24	204127.57
39	87164.19	177834.09	204021.97
38	87149.93	177713.07	203916.49
37	87135.66	177592.18	203811.14
36	87121.38	177471.41	203705.92
35	87107.10	177350.76	203600.82
34	87092.81	177230.24	203495.85
33	87078.51	177109.85	203391.00
32	87064.20	176989.58	203286.27
31	87049.89	176869.43	203181.68
30	87035.57	176749.40	203077.20

60

29	Sinus	Tangens	Secans
30	49242.36	56577.28	114895.55
31	49267.67	56615.68	114914.47
32	49292.98	56654.10	114933.40
33	49318.29	56692.53	114952.35
34	49343.59	56730.98	114971.32
35	49368.89	56769.44	114990.30
36	49394.19	56807.91	115009.30
37	49419.48	56846.39	115028.31
38	49444.77	56884.88	115047.34
39	49470.05	56923.39	115066.38
40	49495.33	56961.91	115085.44
41	49520.60	57000.45	115104.52
42	49545.87	57038.99	115123.61
43	49571.13	57077.55	115142.72
44	49596.39	57116.12	115161.85
45	49621.65	57154.71	115180.99
46	49646.90	57193.31	115200.15
47	49672.15	57231.92	115219.32
48	49697.40	57270.54	115238.51
49	49722.64	57309.18	115257.72
50	49747.87	57347.83	115276.94
51	49773.10	57386.49	115296.18
52	49798.33	57425.16	115315.43
53	49823.55	57463.85	115334.70
54	49848.77	57502.55	115353.99
55	49873.99	57541.26	115373.29
56	49899.20	57579.99	115392.61
57	49924.41	57618.73	115411.95
58	49949.61	57657.48	115431.30
59	49974.81	57696.25	115450.67
60	50000.00	57735.03	115470.05

	Sinus	Tangens	Secans
30	87035.57	176749.40	203077.
29	87021.24	176629.50	202972.
28	87006.90	176509.72	202868.
27	86992.56	176390.07	202764.
26	86978.21	176270.53	202660.
25	86963.85	176151.12	202556.
24	86949.49	176031.83	202452.
23	86935.12	175912.67	202349.
22	86920.74	175793.62	202245.
21	86906.35	175674.70	202142.
20	86891.96	175555.90	202039.
19	86877.56	175437.22	201936.
18	86863.15	175318.66	201833.
17	86848.73	175200.23	201730.
16	86834.31	175081.91	201627.
15	86819.88	174963.71	201524.
14	86805.44	174845.64	201422.
13	86791.00	174727.68	201320.
12	86776.55	174609.84	201217.
11	86762.09	174492.13	201115.
10	86747.62	174374.53	201013.
9	86733.14	174257.05	200911.
8	86718.66	174139.69	200809.
7	86704.17	174022.45	200708.
6	86689.67	173905.33	200606.
5	86675.17	173788.33	200505.
4	86660.66	173671.44	200404.
3	86646.14	173554.68	200302.
2	86631.61	173438.03	200201.
1	86617.08	173321.49	200100.
0	86602.54	173205.08	200000.
60			

30	Sinus	Tangens	Secans
0	50000.00	57735.03	115470.05
1	50025.19	57773.82	115489.45
2	50050.38	57812.62	115508.87
3	50075.56	57851.44	115528.30
4	50100.74	57890.27	115547.75
5	50125.91	57929.11	115567.22
6	50151.08	57967.97	115586.70
7	50176.24	58006.84	115606.20
8	50201.40	58045.73	115625.72
9	50226.55	58084.62	115645.25
10	50251.70	58123.53	115664.80
11	50276.85	58162.45	115684.36
12	50301.99	58201.39	115703.94
13	50327.13	58240.34	115723.54
14	50352.27	58279.30	115743.15
15	50377.40	58318.28	115762.78
16	50402.53	58357.27	115782.43
17	50427.65	58396.27	115802.09
18	50452.77	58435.28	115821.77
19	50477.88	58474.31	115841.47
20	50502.99	58513.35	115861.18
21	50528.09	58552.41	115880.91
22	50553.19	58591.48	115900.65
23	50578.28	58630.56	115920.41
24	50603.37	58669.65	115940.19
25	50628.46	58708.76	115959.99
26	50653.55	58747.88	115979.80
27	50678.63	58787.02	115999.63
28	50703.70	58826.17	116019.47
29	50728.77	58865.33	116039.33
30	50753.84	58904.50	116059.21

	Sinus	Tangens	Secans
60	86602.54	173205.08	200000.00
59	86587.99	173088.78	199899.29
58	86573.43	172972.60	199798.70
57	86558.87	172856.54	199698.23
56	86544.30	172740.60	199597.88
55	86529.72	172624.77	199497.64
54	86515.14	172509.05	199397.53
53	86500.55	172393.45	199297.52
52	86485.95	172277.97	199197.64
51	86471.34	172162.61	199097.87
50	86456.73	172047.36	198998.22
49	86442.11	171932.22	198898.69
48	86427.48	171817.20	198799.27
47	86412.84	171702.30	198699.97
46	86398.20	171587.51	198600.80
45	86383.55	171472.83	198501.72
44	86368.89	171358.27	198402.76
43	86354.23	171243.82	198303.93
42	86339.56	171129.49	198205.20
41	86324.88	17101[illegible].27	198106.59
40	86310.19	170901.16	198008.10
39	86295.49	170787.17	197909.72
38	86280.79	170673.29	197811.46
37	86266.08	170559.53	197713.31
36	86251.36	170445.87	197615.27
35	86236.64	170332.33	197517.35
34	86221.91	170218.90	197419.54
33	86207.17	170105.59	197321.85
32	86192.43	169992.38	197224.26
31	86177.68	169879.29	197126.80
30	86162.92	169766.31	197029.44

59

30	Sinus	Tangens	Secans
30	50753.84	58904.50	116059.21
31	50778.90	58943.69	116079.11
32	50803.96	58982.89	116099.02
33	50829.01	59022.11	116118.95
34	50854.06	59061.34	116138.89
35	50879.10	59100.58	116158.85
36	50904.14	59139.83	116178.83
37	50929.18	59179.10	116198.82
38	50954.21	59218.39	116218.83
39	50979.24	59257.68	116238.86
40	51004.26	59296.99	116258.91
41	51029.28	59336.32	116278.97
42	51054.29	59375.66	116299.05
43	51079.30	59415.01	116319.14
44	51104.31	59454.37	116339.25
45	51129.31	59493.75	116359.38
46	51154.31	59533.14	116379.53
47	51179.30	59572.54	116399.69
48	51204.29	59611.96	116419.87
49	51229.27	59651.40	116440.07
50	51254.25	59690.84	116460.28
51	51279.22	59730.30	116480.51
52	51304.19	59769.78	116500.76
53	51329.16	59809.27	116521.02
54	51354.12	59848.77	116541.30
55	51379.08	59888.28	116561.60
56	51404.04	59927.81	116581.91
57	51428.99	59967.35	116602.24
58	51453.93	60006.91	116622.59
59	51478.87	60046.48	116642.96
60	51503.81	60086.06	116663.34

	Sinus	Tangens	Secans
30	86162.92	169766.31	197029.44
29	86148.15	169653.44	196932.20
28	86133.37	169540.69	196835.07
27	86118.59	169428.04	196738.05
26	86103.80	169315.50	196641.14
25	86089.00	169203.08	196544.34
24	86074.20	169090.77	196447.67
23	86059.39	168978.56	196351.10
22	86044.57	168866.47	196254.64
21	86029.74	168754.49	196158.29
20	86014.91	168642.61	196062.06
19	86000.07	168530.85	195965.93
18	85985.22	168419.19	195869.92
17	85970.37	168307.65	195774.01
16	85955.51	168196.21	195678.22
15	85940.64	168084.89	195582.54
14	85925.76	167973.67	195486.97
13	85910.88	167862.56	195391.50
12	85895.99	167751.56	195296.15
11	85881.09	167640.67	195200.91
10	85866.18	167529.88	195105.77
9	85851.27	167419.21	195010.75
8	85836.35	167308.64	194915.83
7	85821.42	167198.18	194821.02
6	85806.49	167087.82	194726.32
5	85791.55	166977.58	194631.73
4	85776.60	166867.44	194537.25
3	85761.64	166757.41	194442.88
2	85746.68	166647.48	194348.61
1	85731.71	166537.66	194254.45
0	85716.73	166427.95	194160.40

Sinus	*Tangens*	*Secans*
51503.81	60086.66	116663.34
51528.74	60125.66	116683.74
51553.67	60165.27	116704.16
51578.59	60204.90	116724.59
51603.51	60244.54	116745.04
51628.42	60284.19	116765.51
51653.33	60323.86	116785.99
51678.24	60363.54	116806.49
51703.14	60403.23	116827.01
51728.04	60442.94	116847.55
51752.93	60482.66	116868.10
51777.82	60522.40	116888.67
51802.70	60562.15	116909.26
51827.58	60601.92	116929.86
51852.46	60641.70	116950.48
51877.33	60681.49	116971.12
51902.19	60721.30	116991.78
51927.05	60761.12	117012.45
51951.91	60800.95	117033.14
51976.76	60840.80	117053.85
52001.61	60880.67	117074.57
52026.46	60920.54	117095.31
52051.30	60960.43	117116.07
52076.13	61000.34	117136.85
52100.96	61040.26	117157.64
52125.79	61080.19	117178.45
52150.61	61120.14	117199.28
52175.43	61160.11	117220.13
52200.24	61200.08	117240.99
52225.05	61240.07	117261.87
52249.86	61280.08	117282.77

	Sinus	Tangens	Secans
5o	85716.73	166427.95	194160.40
9	85701.74	166318.34	194066.46
8	85686.75	166208.84	193972.62
7	85671.75	166099.45	193878.89
6	85656.74	165990.16	193785.27
5	85641.73	165880.97	193691.76
4	85626.71	165771.89	193598.35
3	85611.68	165662.92	193505.05
2	85596.64	165554.05	193411.85
1	85581.60	165445.29	193318.76
o	85566.55	165336.63	193225.78
9	85551.49	165228.08	193132.90
8	85536.42	165119.63	193040.13
7	85521.35	165011.28	192947.46
6	85506.27	164903.04	192854.90
5	85491.18	164794.90	192762.44
4	85476.09	164686.86	192670.09
3	85460.99	164578.93	192577.84
2	85445.88	164471.11	192485.70
1	85430.76	164363.38	192393.66
o	85415.64	164255.76	192301.73
9	85400.51	164148.24	192209.90
8	85385.37	164040.82	192118.17
7	85370.23	163933.51	192026.55
6	85355.08	163826.30	191935.03
5	85339.92	163719.19	191843.62
4	85324.75	163612.18	191752.30
3	85309.58	163505.28	191661.09
2	85294.40	163398.47	191569.99
1	85279.21	163291.77	191478.99
o	85264.02	163185.17	191388.09

31	Sinus	Tangens	Secans
30	52249.86	61280.08	117282.77
31	52274.66	61320.10	117303.69
32	52299.45	61360.13	117324.62
33	52324.24	61400.18	117345.57
34	52349.03	61440.24	117366.54
35	52373.81	61480.32	117387.52
36	52398.59	61520.41	117408.52
37	52423.36	61560.52	117429.54
38	52448.13	61600.64	117450.58
39	52472.90	61640.77	117471.64
40	52497.66	61680.92	117492.71
41	52522.41	61721.08	117513.80
42	52547.16	61761.26	117534.91
43	52571.91	61801.45	117556.03
44	52596.65	61841.66	117577.17
45	52621.39	61881.88	117598.33
46	52646.12	61922.11	117619.51
47	52670.85	61962.36	117640.70
48	52695.58	62002.63	117661.91
49	52720.30	62042.91	117683.14
50	52745.02	62083.20	117704.39
51	52769.73	62123.51	117725.66
52	52794.44	62163.83	117746.94
53	52819.14	62204.17	117768.24
54	52843.84	62244.52	117789.56
55	52868.53	62284.88	117810.90
56	52893.22	62325.26	117832.25
57	52917.90	62365.66	117853.62
58	52942.58	62406.07	117875.01
59	52967.26	62446.50	117896.42
60	52991.93	62486.94	117917.84

	Sinus	*Tangens*	*Secans*
30	85264.02	163185.17	191388.09
29	85248.81	163078.67	191297.29
28	85233.60	162972.27	191206.59
27	85218.38	162865.97	191116.00
26	85203.16	162759.77	191025.51
25	85187.93	162653.68	190935.12
24	85172.69	162547.68	190844.83
23	85157.44	162441.78	190754.64
22	85142.19	162335.99	190664.56
21	85126.93	162230.29	190574.57
20	85111.66	162124.69	190484.69
19	85096.39	162019.20	190394.91
18	85081.11	161913.80	190305.22
17	85065.82	161808.50	190215.64
16	85050.52	161703.30	190126.16
15	85035.22	161598.20	190036.78
14	85019.91	161493.20	189947.50
13	85004.59	161388.29	189858.32
12	84989.27	161283.49	189769.24
11	84973.94	161178.78	189680.26
10	84958.60	161074.17	189591.38
9	84943.25	160969.66	189502.59
8	84927.90	160865.25	189413.91
7	84912.54	160760.94	189325.32
6	84897.17	160656.72	189236.84
5	84881.79	160552.60	189148.45
4	84866.41	160448.58	189060.16
3	84851.02	160344.65	188971.97
2	84835.62	160240.82	188883.88
1	84820.22	160137.09	188795.89
0	84804.81	160033.45	188707.99
58		I	

32	Sinus	Tangens	Secans
0	52991.93	62486.94	117917.84
1	53016.59	62527.39	117939.28
2	53041.25	62567.86	117960.74
3	53065.91	62608.34	117982.22
4	53090.56	62648.84	118003.72
5	53115.21	62689.35	118025.23
6	53139.86	62729.88	118046.76
7	53164.50	62770.42	118068.31
8	53189.13	62810.98	118089.88
9	53213.76	62851.56	118111.47
10	53238.39	62892.15	118133.07
11	53263.01	62932.75	118154.69
12	53287.63	62973.36	118176.33
13	53312.24	63013.99	118197.99
14	53336.85	63054.64	118219.66
15	53361.45	63095.30	118241.35
16	53386.05	63135.98	118263.06
17	53410.64	63176.67	118284.79
18	53435.23	63217.38	118306.54
[redacted]	53459.82	63258.10	118328.30
[redacted]	[redacted]	63298.83	118350.08
[redacted]	[redacted]	63339.58	118371.88
22	[redacted]	63380.35	118393.70
23	[redacted]	63421.13	118415.54
24	53582.68	63461.93	118437.40
25	53607.24	63502.74	118459.27
26	53631.79	63543.57	118481.16
27	53656.34	63584.41	118503.07
28	53680.88	63625.27	118525.00
29	53705.42	63666.14	118546.94
30	53729.96	63707.03	118568.91

	Sinus	*Tangens*	*Secans*
60	84804.81	160033.45	188707.99
59	84789.39	159929.91	188620.19
58	84773.96	159826.47	188532.49
57	84758.53	159723.12	188444.89
56	84743.09	159619.87	188357.38
55	84727.64	159516.72	188269.97
54	84712.19	159413.66	188182.66
53	84696.73	159310.70	188095.45
52	84681.26	159207.83	188008.33
51	84665.78	159105.05	187921.31
50	84650.30	159002.38	187834.38
49	84634.81	158899.79	187747.55
48	84619.31	158797.30	187660.82
47	84603.81	158694.91	187574.18
46	84588.20	158592.61	187487.64
45	84572.78	158490.41	187401.20
44	84557.25	158388.30	187314.85
43	84541.72	158286.28	187228.59
42	84526.18	158184.36	187142.43
41	84510.63	158082.53	187056.37
40	84495.08	157980.79	186970.40
39	84479.52	157879.15	186884 53
38	84463.95	157777.60	186798.75
37	84448.37	157676.15	186713.06
36	84432.79	157574 79	186627.47
35	84417.20	157473.52	186541.97
34	84401.60	157372.34	186456.57
33	84386.00	157271.26	186371.26
32	84370.39	157170.26	186286.05
31	84354.77	157069.36	186200.93
30	84339.14	156968.56	186115.90

32	Sinus	Tangens	Secans
30	53729.96	63707.03	118568.91
31	53754.49	63747.93	118590.89
32	53779.02	63788.85	118612.89
33	53803.54	63829.78	118634.91
34	53828.06	63870.73	118656.95
35	53852.57	63911.69	118679.00
36	53877.08	63952.67	118701.07
37	53901.58	63993.66	118723.16
38	53926.08	64034.67	118745.27
39	53950.58	64075.69	118767.40
40	53975.07	64116.73	118789.55
41	53999.55	64157.79	118811.71
42	54024.03	64198.86	118833.89
43	54048.51	64239.95	118856.09
44	54072.98	64281.05	118878.31
45	54097.45	64322.16	118900.55
46	54121.91	64363.29	118922.81
47	54146.37	64404.44	118945.08
48	54170.82	64445.60	118967.37
49	54195.27	64486.78	118989.68
50	54219.71	64527.97	119012.01
51	54244.15	64569.18	119034.36
52	54268.59	64610.41	119056.73
53	54293.02	64651.65	119079.12
54	54317.44	64692.90	119101.52
55	54341.86	64734.17	119123.94
56	54366.28	64775.46	119146.38
57	54390.69	64816.76	119168.84
58	54415.10	64858.08	119191.32
59	54439.50	64899.41	119213.82
60	54463.90	64940.76	119236.33

	Sinus	Tangens	Secans
30	84339.14	156968.56	186115.90
29	84323.51	156867.84	186030.96
28	84307.87	156767.22	185946.12
27	84292.22	156666.69	185861.38
26	84276.57	156566.25	185776.72
25	84260.91	156465.90	185692.16
24	84245.24	156365.64	185607.69
23	84229.56	156265.48	185523.31
22	84213.88	156165.40	185439.03
21	84198.19	156065.42	185354.83
20	84182.49	155965.52	185270.73
19	84166.79	155865.72	185186.72
18	84151.08	155766.01	185102.81
17	84135.36	155666.39	185018.98
16	84119.63	155566.85	184935.25
15	84103.90	155467.41	184851.61
14	84088.16	155368.06	184768.05
13	84072.41	155268.80	184684.59
12	84056.66	155169.63	184601.23
11	84040.90	155070.54	184517.95
10	84025.13	154971.55	184434.76
9	84009.35	154872.64	184351.66
8	83993.57	154773.83	184268.66
7	83977.78	154675.10	184185.74
6	83961.98	154576.46	184102.92
5	83946.18	154477.92	184020.18
4	83930.37	154379.46	183937.53
3	83914.55	154281.08	183854.98
2	83898.73	154182.80	183772.51
1	83882.90	154084.60	183690.13
0	83867.06	153986.50	183607.84

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33	Sinus	Tangens	Secans
0	54463.90	64940.76	119236.33
1	54488.30	64982.12	119258.86
2	54512.69	65023.50	119281.41
3	54537.07	65064.90	119303.98
4	54561.45	65106.31	119326.57
5	54585.83	65147.74	119349.18
6	54610.20	65189.18	119371.81
7	54634.56	65230.64	119394.46
8	54658.92	65272.11	119417.12
9	54683.28	65313.60	119439.80
10	54707.63	65355.11	119462.50
11	54731.98	65396.63	119485.22
12	54756.32	65438.17	119507.96
13	54780.66	65479.72	119530.72
14	54804.99	65521.29	119553.50
15	54829.32	65562.87	119576.30
16	54853.65	65604.47	119599.11
17	54877.97	65646.09	119621.94
18	54902.28	65687.72	119644.79
19	54926.59	65729.37	119667.66
20	54950.90	65771.03	119690.55
21	54975.20	65812.71	119713.46
22	54999.50	65854.41	119736.39
23	55023.79	65896.12	119759.34
24	55048.08	65937.85	119782.31
25	55072.36	65979.59	119805.29
26	55096.64	66021.35	119828.29
27	55120.91	66063.13	119851.31
28	55145.18	66104.92	119874.35
29	55169.44	66146.73	119897.41
30	55193.70	66188.56	119920.49

	Sinus	Tangens	Secans
60	83867.06	153986.50	183607.84
59	83851.21	153888.48	183525.64
58	83835.36	153790.55	183443.53
57	83819.50	153692.70	183361.51
56	83803.63	153594.94	183279.58
55	83787.75	153497.27	183197.74
54	83771.87	153399.69	183115.99
53	83755.98	153302.20	183034.32
52	83740.08	153204.79	182952.74
51	83724.[illegible]	153107.47	182871.25
50	83708.27	153010.23	182789.85
49	83692.35	152913.08	182708.54
48	83676.43	152816.02	182627.31
47	83660.50	152719.04	182546.17
46	83644.56	152622.15	182465.12
45	83628.61	152525.35	182384.16
44	83612.66	152428.63	182303.28
43	83596.70	152332.00	182222.49
42	83580.73	152235.45	182141.79
41	83564.76	152138.99	182061.18
40	83548.78	152042.61	181980.65
39	83532.79	151946.32	181900.21
38	83516.80	151850.12	181819.85
37	83500.80	151754.00	181739.58
36	83484.79	151657.96	181659.40
35	83468.77	151562.01	181579.30
34	83452.75	151466.14	181499.29
33	83436.72	151370.36	181419.37
32	83420.68	151274.66	181339.53
31	83404.63	151179.05	181259.72
30	83388.58	151083.52	181180.10

33	Sinus	Tangens	Secan:
30	55193.70	66188.56	11992049
31	55217.95	66230.40	119943.59
32	55242.20	66272.26	119966.71
33	55266.45	66314.13	119989.85
34	55290.69	66356.02	120013.01
35	55314.92	66397.92	120036.19
36	55339.15	66439.84	120059.38
37	55363.38	66481.78	120082.59
38	55387.60	66523.7[illegible]	120105.82
39	55411.82	66565[illegible]	120129.07
40	55436.03	66607.69	120152.34
41	55460.24	66649.69	120175.63
42	55484.44	66691.71	120198.94
43	55508.64	66733.75	120222.27
44	55532.83	66775.80	120245.62
45	55557.02	66817.87	120268.99
46	55581.21	66859.95	120292.37
47	55605.39	66902.05	120315.77
48	55629.56	66944.17	120339.19
49	55653.73	66986.30	120362.64
50	55677.90	67028.45	120386.10
51	55702.06	67070.62	120409.58
52	55726.21	67112.80	120433.08
53	55750.36	67155.00	120456.60
54	55774.51	67197.21	120480.14
55	55798.65	67239.44	120503.70
56	55822.79	67281.69	120527.28
57	55846.92	67323.96	120550.88
58	55871.05	67366.24	120574.50
59	55895.17	67408.54	120598.14
60	55919.29	67450.85	120621.80

	Sinus	Tangens	Secans
30	83388.58	151083.52	181180.10
29	83372.52	150988.07	181100.52
28	83356.45	150892.71	181021.02
27	83340.38	150797.43	180941.61
26	83324.30	150702.24	180862.28
25	83308.21	150607.13	180783.04
24	83292.12	150512.10	180703.88
23	83276.02	150417.16	180624.81
22	83259.91	150322.30	180545.82
21	83243.80	150227.52	180466.91
20	83227.68	150132.82	180388.09
19	83211.55	150038.20	180309.35
18	83195.41	149943.67	180230.70
17	83179.27	149849.22	180152.13
16	83163.12	149754.86	180073.65
15	83146.96	149660.58	179995.25
14	83130.79	149566.38	179916.93
13	83114.62	149472.26	179838.69
12	83098.44	149378.22	179760.54
11	83082.26	149284.26	179682.47
10	83066.07	149190.38	179604.48
9	83049.87	149096.59	179526.58
8	83033.66	149002.88	179448.76
7	83017.45	148909.25	179371.02
6	83001.23	148815.70	179293.37
5	82985.00	148722.23	179215.80
4	82968.76	148628.84	179138.31
3	82952.52	148535.53	179060.90
2	82936.27	148442.30	178983.58
1	82920.02	148349.16	178906.33
0	82903.76	148256.10	178829.16
56		I 5	

34	*Sinus*	*Tangens*	*Secans*
0	55919.29	67450.85	120621.80
1	55943.40	67493.18	120645.48
2	55967.51	67535.53	120669.18
3	55991.61	67577.90	120692.89
4	56015.71	67620.28	120716.62
5	56039.81	67662.68	120740.37
6	56063.90	67705.09	120764.14
7	56087.98	67747.52	120787.93
8	56112.06	67789.97	120811.75
9	56136.14	67832.44	120835.59
10	56160.21	67874.92	120859.44
11	56184.28	67917.42	120883.31
12	56208.34	67959.93	120907.20
13	56232.39	68002.46	120931.12
14	56256.44	68045.01	120955.05
15	56280.49	68087.58	120979.00
16	56304.53	68130.16	121002.97
17	56328.57	68172.76	121026.96
18	56352.60	68215.38	121050.97
19	56376.63	68258.01	121075.00
20	56400.65	68300.66	121099.05
21	56424.67	68343.33	121123.12
22	56448.69	68386.01	121147.21
23	56472.70	68428.71	121171.32
24	56496.70	68471.43	121195.45
25	56520.70	68514.17	121219.60
26	56544.69	68556.92	121243.77
27	56568.68	68599.69	121267.96
28	56592.67	68642.47	121292.17
29	56616.65	68685.27	121316.40
30	56640.62	68728.10	121340.64

	Sinus	Tangens	Secans
60	82903.76	148256.10	178829.16
59	82887.49	148163.11	178752.08
58	82871.21	148070.21	178675.08
57	82854.93	147977.38	178598.17
56	82838.64	147884.63	178521.33
55	82822.34	147791.97	178444.57
54	82806.03	147699.38	178367.90
53	82789.72	147606.88	178291.31
52	82773.40	147514.45	178214.79
51	82757.07	147422.10	178138.36
50	82740.74	147329.83	178062.01
49	82724.40	147237.64	177985.74
48	82708.05	147145.53	177909.55
47	82691.70	147053.50	177833.43
46	82675.34	146961.55	177757.40
45	82658.97	146869.67	177681.45
44	82642.60	146777.87	177605.58
43	82626.22	146686.16	177529.79
42	82609.83	146594.52	177454.08
41	82593.43	146502.96	177378.45
40	82577.03	146411.47	177302.90
39	82560.62	146320.07	177227.43
38	82544.20	146228.74	177152.04
37	82527.78	146137.49	177076.73
36	82511.35	146046.32	177001.49
35	82494.91	145955.22	176926.33
34	82478.47	145864.20	176851.25
33	82462.02	145773.26	176776.25
32	82445.56	145682.40	176701.33
31	82429.09	145591.61	176626.49
30	82412.62	145500.90	176551.73

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34	*Sinus*	*Tangens*	*Secans*
30	56640.62	68728.10	121340.64
31	56664.59	68770.94	121364.91
32	56688.56	68813.79	121389.20
33	56712.52	68856.66	121413.51
34	56736.48	68899.55	121437.83
35	56760.43	68942.46	121462.18
36	56784.37	68985.38	121486.55
37	56808.31	69028.32	121510.94
38	56832.25	69071.28	121535.35
39	56856.18	69114.25	121559.78
40	56880.11	69157.24	121584.23
41	56904.03	69200.25	121608.70
42	56927.95	69243.28	121633.19
43	56951.86	69286.33	121657.70
44	56975.77	69329.39	121682.23
45	56999.68	69372.47	121706.78
46	57023.58	69415.57	121731.35
47	57047.47	69458.68	121755.94
48	57071.36	69501.81	121780.55
49	57095.24	69544.96	121805.18
50	57119.12	69588.13	121829.83
51	57142.99	69631.31	121854.50
52	57166.86	69674.51	121879.19
53	57190.73	69717.73	121903.90
54	57214.59	69760.97	121928.64
55	57238.44	69804.22	121953.39
56	57262.29	69847.49	121978.16
57	57286.14	69890.78	122002.96
58	57309.98	69934.09	122027.77
59	57333.81	69977.41	122052.60
60	57357.64	70020.75	122077.46

	Sinus	Tangens	Secans
30	82412.62	145500.90	176551.73
29	82396.14	145410.27	176477.04
28	82379.65	145319.71	176402.43
27	82363.16	145229.23	176327.91
26	82346.66	145138.83	176253.45
25	82330.15	145048.50	176179.08
24	82313.64	144958.25	176104.78
23	82297.12	144868.08	176030.56
22	82280.59	144777.98	175956.42
21	82264.05	144687.96	175882.36
20	82247.51	144598.01	175808.37
19	82230.96	144508.14	175734.46
18	82214.40	144418.34	175660.63
17	82197.84	144328.62	175586.87
16	82181.27	144238.97	175513.19
15	82164.69	144149.40	175439.59
14	82148.11	144059.91	175366.07
13	82131.52	143970.49	175292.62
12	82114.92	143881.14	175219.24
11	82098.31	143791.87	175145.94
10	82081.70	143702.68	175072.73
9	82065.08	143613.56	174999.58
8	82048.46	143524.51	174926.51
7	82031.83	143435.54	174853.52
6	82015.19	143346.64	174780.60
5	81998.54	143257.81	174707.76
4	81981.89	143169.06	174634.99
3	81965.23	143080.39	174562.30
2	81948.56	142991.78	174489.69
1	81931.89	142903.26	174417.15
0	81915.21	142814.80	174344.68

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35	Sinus	Tangens	Secans
0	57357.64	70020.75	122077.46
1	57381.47	70064.11	122102.33
2	57405.29	70107.49	122127.23
3	57429.11	70150.89	122152.15
4	57452.92	70194.30	122177.08
5	57476.72	70237.73	122202.04
6	57500.52	70281.18	122227.02
7	57524.32	70324.65	122252.02
8	57548.11	70368.13	122277.03
9	57571.90	70411.63	122302.07
10	57595.68	70455.15	122327.13
11	57619.46	70498.69	122352.21
12	57643.23	70542.24	122377.32
13	57667.00	70585.81	122402.44
14	57690.76	70629.40	122427.58
15	57714.52	70673.01	122452.74
16	57738.27	70716.64	122477.93
17	57762.02	70760.29	122503.13
18	57785.76	70803.95	122528.36
19	57809.50	70847.63	122553.61
20	57833.23	70891.33	122578.87
21	57856.96	70935.05	122604.16
22	57880.68	70978.78	122629.47
23	57904.40	71022.53	122654.80
24	57928.12	71066.30	122680.15
25	57951.83	71110.09	122705.52
26	57975.53	71153.90	122730.91
27	57999.23	71197.73	122756.33
28	58022.92	71241.57	122781.76
29	58046.61	71285.43	122807.21
30	58070.30	71329.31	122832.69

	Sinus	Tangens	Secans
60	81915.21	142814.80	174344.68
59	81898.52	142726.42	174272.29
58	81881.82	142638.11	174199.97
57	81865.12	142549.87	174127.73
56	81848.41	142461.71	174055.56
55	81831.69	142373.62	173983.47
54	81814.97	142285.61	173911.45
53	81798.24	142197.66	173839.51
52	81781.50	142109.79	173767.64
51	81764.76	142022.00	173695.85
50	81748.01	141934.27	173624.13
49	81731.25	141846.62	173552.47
48	81714.49	141759.04	173480.90
47	81697.72	141671.53	173409.41
46	81680.94	141584.09	173337.98
45	81664.15	141496.73	173266.63
44	81647.36	141409.43	173195.35
43	81630.56	141322.21	173124.14
42	81613.76	141235.06	173053.01
41	81596.95	141147.99	172981.95
40	81580.13	141060.98	172910.96
39	81563.30	140974.05	172840.05
38	81546.47	140887.18	172769.21
37	81529.63	140800.39	172698.44
36	81512.78	140713.67	172627.74
35	81495.93	140627.02	172557.12
34	81479.06	140540.44	172486.57
33	81462.19	140453.93	172416.09
32	81445.32	140367.49	172345.68
31	81428.44	140281.13	172275.34
30	81411.55	140194.83	172205.08

35	Sinus	Tangens	Secans
30	58070.30	71329.31	122832.69
31	58093.98	71373.21	122858.19
32	58117.65	71417.13	122883.71
33	58141.32	71461.06	122909.25
34	58164.98	71505.01	122934.81
35	58188.64	71548.98	122960.39
36	58212.30	71592.97	122985.99
37	58235.95	71636.98	123011.61
38	58259.59	71681.01	123037.25
39	58283.23	71725.05	123062.92
40	58306.87	71769.11	123088.61
41	58330.50	71813.19	123114.32
42	58354.12	71857.29	123140.05
43	58377.74	71901.41	123165.80
44	58401.36	71945.55	123191.57
45	58424.97	71989.70	123217.36
46	58448.57	72033.87	123243.17
47	58472.17	72078.06	123269.00
48	58495.77	72122.27	123294.86
49	58519.36	72166.50	123320.74
50	58542.94	72210.75	123346.64
51	58566.52	72255.02	123372.56
52	58590.10	72299.31	123398.50
53	58613.67	72343.61	123424.46
54	58637.24	72387.93	123450.44
55	58660.80	72432.27	123476.45
56	58684.35	72476.63	123502.48
57	58707.90	72521.01	123528.52
58	58731.45	72565.41	123554.59
59	58754.99	72609.83	123580.68
60	58778.53	72654.26	123606.80

	Sinus	Tangens	Secans
30	81411.55	140194.83	172205.08
29	81394.65	140108.60	172134.89
28	81377.75	140022.45	172064.77
27	81360.84	139936.36	171994.72
26	81343.93	139850.34	171924.75
25	81327.01	139764.40	171854.84
24	81310.08	139678.52	171785.01
23	81293.14	139592.72	171715.25
22	81276.20	139506.98	171645.56
21	81259.25	139421.31	171575.94
20	81242.29	139335.71	171506.39
19	81225.32	139250.18	171436.91
18	81208.35	139164.73	171367.50
17	81191.37	139079.34	171298.17
16	81174.39	138994.01	171228.90
15	81157.40	138908.76	171159.70
14	81140.40	138823.58	171090.58
13	81123.39	138738.46	171021.52
12	81106.38	138653.42	170952.54
11	81089.36	138568.44	170883.62
10	81072.33	138483.53	170814.78
9	81055.30	138398.69	170746.00
8	81038.26	138313.92	170677.30
7	81021.21	138229.22	170608.66
6	81004.16	138144.58	170540.10
5	80987.10	138060.01	170471.60
4	80970.03	137975.51	170403.18
3	80952.96	137891.08	170334.82
2	80935.88	137806.72	170266.53
1	80918.79	137722.42	170198.31
0	80901.70	137638.19	170130.16
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36	Sinus	Tangens	Secans
0	58778.53	72654.26	123606.80
1	58802.06	72698.71	123632.94
2	58825.58	72743.18	123659.09
3	58849.10	72787.67	123685.26
4	58872.62	72832.18	123711.48
5	58896.13	72876.71	123737.68
6	58919.64	72921.26	123763.93
7	58943.14	72965.82	123790.19
8	58966.63	73010.40	123816.47
9	58990.12	73055.01	123842.78
10	59013.61	73099.63	123869.11
11	59037.09	73144.27	123895.46
12	59060.57	73188.94	123921.83
13	59084.04	73233.62	123948.22
14	59107.50	73278.31	123974.64
15	59130.96	73323.03	124001.08
16	59154.42	73367.77	124027.54
17	59177.87	73412.53	124054.02
18	59201.32	73457.30	124080.52
19	59224.76	73502.10	124107.04
20	59248.19	73546.91	124133.59
21	59271.62	73591.74	124160.16
22	59295.05	73636.60	124186.75
23	59318.47	73681.47	124213.36
24	59341.89	73726.36	124239.99
25	59365.30	73771.27	124266.65
26	59388.71	73816.20	124293.33
27	59412.11	73861.15	124320.03
28	59435.50	73906.11	124346.75
29	59458.89	73951.10	124373.49
30	59482.28	73996.11	124400.26

	Sinus	Tangens	Secans
60	80901.70	137638.19	170130.16
59	80884.60	137554.03	170062.08
58	80867.49	137469.94	169994.07
57	80850.37	137385.91	169926.12
56	80833.25	137301.95	169858.25
55	80816.12	137218.05	169790.44
54	80798.99	137134.23	169722.71
53	80781.85	137050.47	169655.04
52	80764.70	136966.78	169587.43
51	80747.54	136883.15	169519.90
50	80730.38	136799.59	169452.44
49	80713.21	136716.10	169385.04
48	80696.03	136632.67	169317.71
47	80678.85	136549.31	169250.45
46	80661.66	136466.02	169183.26
45	80644.46	136382.79	169116.13
44	80627.26	136299.63	169049.07
43	80610.05	136216.53	168982.08
42	80592.83	136133.50	168915.16
41	80575.60	136050.54	168848.30
40	80558.37	135967.64	168781.51
39	80541.13	135884.81	168714.79
38	80523.89	135802.04	168648.14
37	80506.64	135719.34	168581.55
36	80489.38	135636.70	168515.03
35	80472.11	135554.13	168448.57
34	80454.84	135471.62	168382.18
33	80437.56	135389.18	168315.86
32	80420.28	135306.80	168249.61
31	80402.99	135224.49	168183.42
30	80385.69	135142.24	168117.30

36	Sinus	Tangens	Secans
30	59482.28	73996.11	124400.26
31	59505.66	74041.14	124427.05
32	59529.03	74086.18	124453.86
33	59552.40	74131.24	124480.69
34	59575.77	74176.33	124507.54
35	59599.13	74221.43	124534.42
36	59622.49	74266.55	124561.31
37	59645.84	74311.70	124588.23
38	59669.18	74356.86	124615.18
39	59692.52	74402.04	124642.14
40	59715.86	74447.24	124669.13
41	59739.19	74492.46	124696.14
42	59762.51	74537.70	124723.17
43	59785.83	74582.96	124750.22
44	59809.15	74628.24	124777.30
45	59832.46	74673.54	124804.40
46	59855.76	74718.86	124831.52
47	59879.06	74764.20	124858.66
48	59902.36	74809.56	124885.83
49	59925.65	74854.94	124913.02
50	59948.93	74900.33	124940.23
51	59972.21	74945.75	124967.46
52	59995.49	74991.19	124994.71
53	60018.76	75036.65	125021.99
54	60042.02	75082.12	125049.29
55	60065.28	75127.62	125076.61
56	60088.53	75173.14	125103.96
57	60111.78	75218.67	125131.33
58	60135.03	75264.23	125158.72
59	60158.27	75309.81	125186.13
60	60181.50	75355.40	125213.57

	Sinus	*Tangens*	*Secans*
30	80385.69	135142.24	168117.30
29	80368.38	135060.06	168051.24
28	80351.07	134977.94	167985.25
27	80333.75	134895.89	167919.33
26	80316.42	134813.90	167853.47
25	80299.09	134731.97	167787.68
24	80281.75	134650.11	167721.95
23	80264.40	134568.32	167656.29
22	80247.05	134486.58	167590.70
21	80229.69	134404.92	167525.17
20	80212.32	134323.31	167459.70
19	80194.94	134241.77	167394.30
18	80177.56	134160.29	167328.97
17	80160.17	134078.88	167263.70
16	80142.78	133997.53	167198.50
15	80125.38	133916.24	167133.36
14	80107.97	133835.02	167068.28
13	80090.56	133753.86	167003.28
12	80073.14	133672.76	166938.33
11	80055.71	133591.72	166873.45
10	80038.27	133510.75	166808.64
9	80020.83	133429.84	166743.89
8	80003.38	133349.00	166679.20
7	79985.93	133268.22	166614.58
6	79968.47	133187.49	166550.02
5	79951.00	133106.84	166485.52
4	79933.52	133026.24	166421.09
3	79916.04	132945.71	166356.73
2	79898.55	132865.24	166292.43
1	79881.05	132784.83	166228.19
0	79863.55	132704.48	166164.01

;7	Sinus	Tangens	Secans
0	60181.50	75355.40	125213.57
1	60204.73	75401.02	125241.02
2	60227.95	75446.66	125268.50
3	60251.17	75492.32	125296.01
4	60274.39	75537.99	125323.53
5	60297.60	75583.69	125351.08
6	60320.80	75629.41	125378.65
7	60344.00	75675.14	125406.25
8	60367.19	75720.90	125433.87
9	60390.38	75766.68	125461.51
10	60413.56	75812.48	125489.17
11	60436.74	75858.29	125516.85
12	60459.91	75904.13	125544.56
13	60483.08	75949.99	125572.29
14	60506.24	75995.87	125600.05
15	60529.40	76041.77	125627.82
16	60552.55	76087.69	125655.62
17	60575.70	76133.63	125683.45
18	60598.84	76179.59	125711.29
19	60621.98	76225.57	125739.16
20	60645.11	76271.57	125767.05
21	60668.23	76317.59	125794.97
22	60691.35	76363.63	125822.91
23	60714.47	76409.69	125850.87
24	60737.58	76455.77	125878.85
25	60760.69	76501.88	125906.86
26	60783.79	76548.00	125934.89
27	60806.89	76594.14	125962.94
28	60829.98	76640.31	125991.0[illegible]
29	60853.06	76686.49	126019.12
30	60876.14	76732.70	126047.24

	Sinus	Tangens	Secans
60	79863.55	132704.48	166164.01
59	79846.04	132624.20	166099.90
58	79828.52	132543.97	166035.85
57	79811.00	132463.81	165971.87
56	79793.47	132383.71	165907.95
55	79775.93	132303.68	165844.09
54	79758.39	132223.70	165780.30
53	79740.84	132143.79	165716.57
52	79723.28	132063.93	165652.90
51	79705.72	131984.14	165589.29
50	79688.15	131904.41	165525.75
49	79670.57	131824.74	165462.27
48	79652.99	131745.13	165398.85
47	79635.40	131665.59	165335.50
46	79617.80	131586.10	165272.21
45	79600.20	131506.68	165208.98
44	79582.59	131427.31	165145.81
43	79564.97	131348.01	165082.70
42	79547.35	131268.76	165019.66
41	79529.72	131189.58	164956.68
40	79512.08	131110.46	164893.76
39	79494.43	131031.40	164830.90
38	79476.78	130952.39	164768.11
37	79459.12	130873.45	164705.37
36	79441.46	130794.57	164642.70
35	79423.79	130715.75	164580.09
34	79406.11	130636.99	164517.54
33	79388.43	130558.28	164455.06
32	79370.74	130479.64	164392.63
31	79353.04	130401.06	164330.27
30	79335.33	130322.54	164267.96

37	Sinus	Tangens	Secans
30	60876.14	76732.70	126047.24
31	60899.22	76778.93	126075.39
32	60922.29	76825.17	126103.56
33	60945.35	76871.44	126131.75
34	60968.41	76917.73	126159.97
35	60991.47	76964.04	126188.20
36	61014.52	77010.37	126216.46
37	61037.56	77056.72	126244.75
38	61060.60	77103.09	126273.06
39	61083.63	77149.48	126301.40
40	61106.66	77195.89	126329.75
41	61129.68	77242.33	126358.13
42	61152.70	77288.79	126386.53
43	61175.72	77335.26	126414.96
44	61198.73	77381.75	126443.41
45	61221.73	77428.27	126471.88
46	61244.73	77474.81	126500.38
47	61267.72	77521.37	126528.90
48	61290.71	77567.95	126557.45
49	61313.69	77614.55	126586.01
50	61336.66	77661.17	126614.60
51	61359.63	77707.82	126643.22
52	61382.60	77754.48	126671.86
53	61405.56	77801.17	126700.52
54	61428.52	77847.88	126729.21
55	61451.47	77894.60	126757.92
56	61474.42	77941.35	126786.65
57	61497.36	77988.12	126815.41
58	61520.29	78034.92	126844.19
59	61543.22	78081.73	126872.99
60	61566.15	78128.56	126901.82

•	*Sinus*	*Tangens*	*Secans*
30	79335.33	130322.54	164267.96
29	79317.62	130244.07	164205.72
28	79299.90	130165.67	164143.54
27	79282.18	130087.32	164081.42
26	79264.45	130009.04	164019.36
25	79246.71	129930.81	163957.36
24	79228.96	129852.65	163895.42
23	79211.21	129774.54	163833.55
22	79193.45	129696.49	163771.73
21	79175.69	129618.50	163709.97
20	79157.92	129540.57	163648.28
19	79140.14	129462.69	163586.64
18	79122.35	129384.88	163525.07
17	79104.56	129307.12	163463.55
16	79086.76	129229.43	163402.10
15	79068.96	129151.79	163340.70
14	79051.15	129074.21	163279.37
13	79033.33	128996.69	163218.09
12	79015.50	128919.22	163156.88
11	78997.67	128841.82	163095.72
10	78979.83	128764.47	163034.62
9	78961.98	128687.18	162973.59
8	78944.13	128609.95	162912.61
7	78926.27	128532.77	162851.69
6	78908.41	128455.66	162790.83
5	78890.54	128378.60	162730.03
4	78872.66	128301.60	162669.29
3	78854.77	128224.66	162608.61
2	78836.88	128147.76	162547.99
1	78818.98	128070.93	162487.43
0	78801.07	127994.16	162426.92
52			

38	Sinus	Tangens	Secans
0	61566.15	78128.56	126901.82
1	61589.07	78175.42	126930.67
2	61611.98	78222.29	126959.55
3	61634.89	78269.19	126988.45
4	61657.79	78316.11	127017.37
5	61680.69	78363.05	127046.32
6	61703.59	78410.02	127075.29
7	61726.48	78457.00	127104.29
8	61749.36	78504.00	127133.31
9	61772.24	78551.03	127162.35
10	61795.11	78598.08	127191.42
11	61817.98	78645.15	127220.51
12	61840.84	78692.24	127249.63
13	61863.70	78739.35	127278.77
14	61886.55	78786.49	127307.94
15	61909.40	78833.64	127337.12
16	61932.24	78880.82	127366.34
17	61955.07	78928.02	127395.57
18	61977.90	78975.24	127424.84
19	62000.73	79022.48	127454.12
20	62023.55	79069.75	127483.43
21	62046.36	79117.03	127512.76
22	62069.17	79164.34	127542.12
23	62091.98	79211.67	127571.50
24	62114.78	79259.02	127600.91
25	62137.57	79306.40	127630.34
26	62160.36	79353.79	127659.80
27	62183.14	79401.21	127689.28
28	62205.92	79448.65	127718.78
29	62228.69	79496.11	127748.31
30	62251.46	79543.59	127777.87

	Sinus	Tangens	Secans
60	78801.07	127994.16	162426.92
59	78783.16	127917.45	162366.48
58	78765.24	127840.79	162306.09
57	78747.32	127764.19	162245.76
56	78729.39	127687.64	162185.49
55	78711.45	127611.16	162125.28
54	78693.50	127534.73	162065.13
53	78675.55	127458.36	162005.04
52	78657.59	127382.04	161945.00
51	78639.62	127305.78	161885.02
50	78621.65	127229.57	161825.10
49	78603.67	127153.42	161765.24
48	78585.69	127077.33	161705.44
47	78567.70	127001.30	161645.69
46	78549.70	126925.32	161586.00
45	78531.69	126849.39	161526.37
44	78513.68	126773.53	161466.80
43	78495.66	126697.72	161407.28
42	78477.64	126621.96	161347.83
41	78459.61	126546.26	161288.43
40	78441.57	126470.62	161229.08
39	78423.52	126395.03	161169.80
38	78405.47	126319.50	161110.57
37	78387.41	126244.02	161051.40
36	78369.35	126168.60	160992.28
35	78351.28	126093.23	160933.23
34	78333.20	126017.92	160874.23
33	78315.11	125942.67	160815.28
32	78297.02	125867.47	160756.40
31	78278.92	125792.32	160697.57
30	78260.82	125717.23	160638.79

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38	Sinus	Tangens	Secans
30	62251.46	79543.59	127777.87
31	62274.22	79591.10	127807.45
32	62296.98	79638.62	127837.05
33	62319.73	79686.17	127866.67
34	62342.48	79733.74	127896.32
35	62365.22	79781.34	127926.00
36	62387.96	79828.95	127955.70
37	62410.69	79876.59	127985.43
38	62433.42	79924.25	128015.18
39	62456.14	79971.93	128044.95
40	62478.85	80019.63	128074.75
41	62501.56	80067.36	128104.57
42	62524.26	80115.11	128134.42
43	62546.96	80162.88	128164.30
44	62569.66	80210.67	128194.20
45	62592.35	80258.48	128224.12
46	62615.03	80306.32	128254.07
47	62637.71	80354.18	128284.04
48	62660.38	80402.06	128314.04
49	62683.05	80449.97	128344.06
50	62705.71	80497.90	128374.11
51	62728.37	80545.85	128404.18
52	62751.02	80593.82	128434.28
53	62773.66	80641.81	128464.40
54	62796.30	80689.83	128494.55
55	62818.94	80737.87	128524.72
56	62841.57	80785.93	128554.92
57	62864.20	80834.01	128585.14
58	62886.82	80882.12	128615.39
59	62909.43	80930.25	128645.66
60	62932.04	80978.40	128675.96

	Sinus	Tangens	Secans
30	78260.82	125717.23	160638.79
29	78242.71	125642.19	160580.08
28	78224.59	125567.21	160521.42
27	78206.46	125492.29	160462.81
26	78188.33	125417.42	160404.26
25	78170.19	125342.60	160345.77
24	78152.05	125267.84	160287.34
23	78133.90	125193.13	160228.96
22	78115.74	125118.48	160170.64
21	78097.57	125043.88	160112.37
20	78079.40	124969.33	160054.16
19	78061.22	124894.84	159996.00
18	78043.04	124820.40	159937.90
17	78024.85	124746.02	159879.86
16	78006.65	124671.69	159821.87
15	77988.45	124597.42	159763.94
14	77970.24	124523.20	159706.06
13	77952.02	124449.03	159648.24
12	77933.80	124374.92	159590.47
11	77915.57	124300.86	159532.76
10	77897.33	124226.85	159475.11
9	77879.08	124152.90	159417.51
8	77860.83	124079.00	159359.96
7	77842.57	124005.15	159302.47
6	77824.31	123931.36	159245.04
5	77806.04	123857.62	159187.66
4	77787.77	123783.93	159130.33
3	77769.49	123710.30	159073.06
2	77751.20	123636.72	159015.84
1	77732.90	123563.19	158958.68
0	77714.60	123489.72	158901.57

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39	Sinus	Tangens	Secans
0	62932.04	80978.40	128675.96
1	62954.64	81026.58	128706.28
2	62977.24	81074.78	128736.63
3	62999.83	81123.00	128767.00
4	63022.42	81171.24	128797.40
5	63045.00	81219.51	128827.82
6	63067.58	81267.80	128858.27
7	63090.15	81316.11	128888.75
8	63112.72	81364.44	128919.25
9	63135.28	81412.80	128949.77
10	63157.84	81461.18	128980.32
11	63180.39	81509.58	129010.90
12	63202.93	81558.01	129041.50
13	63225.47	81606.46	129072.13
14	63248.00	81654.93	129102.78
15	63270.53	81703.43	129133.46
16	63293.05	81751.95	129164.16
17	63315.57	81800.49	129194.89
18	63338.08	81849.05	129225.64
19	63360.59	81897.64	129256.42
20	63383.09	81946.25	129287.23
21	63405.59	81994.88	129318.06
22	63428.08	82043.54	129348.92
23	63450.57	82092.22	129379.80
24	63473.05	82140.93	129410.71
25	63495.53	82189.65	129441.64
26	63518.00	82238.40	129472.60
27	63540.46	82287.18	129503.59
28	63562.92	82335.97	129534.60
29	63585.37	82384.79	129565.64
30	63607.82	82433.64	129596.70

	Sinus	Tangens	Secans
60	77714.60	123489.72	158901.57
59	77696.29	123416.29	158844.52
58	77677.97	123342.92	158787.52
57	77659.65	123269.61	158730.58
56	77641.32	123196.34	158673.69
55	77622.98	123123.13	158616.85
54	77604.64	123049.97	158560.07
53	77586.29	122976.87	158503.34
52	77567.94	122903.81	158446.67
51	77549.58	122830.81	158390.05
50	77531.21	122757.86	158333.48
49	77512.83	122684.96	158276.97
48	77494.45	122612.11	158220.51
47	77476.06	122539.32	158164.11
46	77457.67	122466.58	158107.76
45	77439.27	122393.89	158051.46
44	77420.86	122321.25	157995.21
43	77402.44	122248.66	157939.02
42	77384.02	122176.18	157882.89
41	77365.59	122103.64	157826.80
40	77347.16	122031.21	157770.77
39	77328.72	121958.83	157714.79
38	77310.27	121886.50	157658.87
37	77291.82	121814.22	157603.00
36	77273.36	121741.99	157547.18
35	77254.89	121669.82	157491.41
34	77236.42	121597.69	157435.70
33	77217.94	121525.62	157380.04
32	77199.45	121453.59	157324.43
31	77180.96	121381.62	157268.87
30	77162.46	121309.70	157213.37

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39	*Sinus*	*Tangens*	*Secans*
30	63607.82	82433.64	129596.70
31	63630.26	82482.51	129627.79
32	63652.70	82531.40	129658.90
33	63675.13	82580.31	129690.04
34	63697.56	82629.25	129721.21
35	63719.98	82678.21	129752.40
36	63742.40	82727.19	129783.62
37	63764.81	82776.20	129814.87
38	63787.21	82825.23	129846.14
39	63809.61	82874.29	129877.44
40	63832.01	82923.37	129908.76
41	63854.40	82972.47	129940.11
42	63876.78	83021.60	129971.48
43	63899.16	83070.75	130002.88
44	63921.53	83119.92	130034.31
45	63943.90	83169.12	130065.76
46	63966.26	83218.34	130097.24
47	63988.62	83267.59	130128.75
48	64010.97	83316.86	130160.28
49	64033.32	83366.15	130191.84
50	64055.66	83415.47	130223.43
51	64077.99	83464.81	130255.04
52	64100.32	83514.18	130286.68
53	64122.64	83563.57	130318.34
54	64144.96	83612.98	130350.0
55	64167.27	83662.42	130381.75
56	64189.58	83711.88	130413.4
57	64211.88	83761.36	130445.2
58	64234.18	83810.87	130477.0
59	64256.47	83860.40	130508.8
60	64278.76	83909.96	130540.7

	Sinus	Tangens	Secans
30	77162.46	121309.70	157213.37
29	77143.95	121237.83	157157.92
28	77125.44	121166.01	157102.52
27	77106.92	121094.24	157047.17
26	77088.39	121022.52	156991.88
25	77069.86	120950.85	156936.64
24	77051.32	120879.23	156881.45
23	77032.78	120807.67	156826.31
22	77014.23	120736.15	156771.23
21	76995.67	120664.68	156716.19
20	76977.10	120593.27	156661.21
19	76958.53	120521.90	156606.28
18	76939.95	120450.58	156551.41
17	76921.37	120379.31	156496.58
16	76902.78	120308.10	156441.81
15	76884.18	120236.93	156387.08
14	76865.58	120165.81	156332.41
13	76846.97	120094.75	156277.79
12	76828.35	120023.73	156223.22
11	76809.73	119952.76	156168 70
10	76791.10	119881.84	156114.24
9	76772.46	119810.97	156059.82
8	76753.82	119740.15	156005.46
7	76735.17	119669.38	155951.15
6	76716.51	119598.66	155896.89
5	76697.85	119527.99	155842.67
4	76679.18	119457.36	155788.51
3	76660.51	119386.79	155734.41
2	76641.83	119316.26	155680.35
1	76623.14	119245.79	155626.34
0	76604.44	119175.36	155572.38

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40	Sinus	Tangens	Secans
0	64278.76	83909.96	130540.73
1	64301.04	83959.54	130572.61
2	64323.32	84009.15	130604.51
3	64345.59	84058.78	130636.44
4	64367.85	84108.44	130668.39
5	64390.11	84158.12	130700.37
6	64412.36	84207.82	130732.38
7	64434.61	84257.55	130764.42
8	64456.85	84307.30	130796.49
9	64479.09	84357.08	130828.58
10	64501.32	84406.88	130860.70
11	64523.55	84456.70	130892.84
12	64545.77	84506.55	130925.01
13	64567.98	84556.43	130957.21
14	64590.19	84606.33	130989.43
15	64612.40	84656.25	131021.68
16	64634.60	84706.20	131053.96
17	64656.79	84756.17	131086.26
18	64678.98	84806.17	131118.59
19	64701.16	84856.19	131150.95
20	64723.34	84906.24	131183.34
21	64745.51	84956.31	131215.75
22	64767.67	85006.40	131248.19
23	64789.83	85056.52	131280.66
24	64811.99	85106.67	131313.16
25	64834.14	85156.84	131345.68
26	64856.28	85207.04	131378.23
27	64878.42	85257.26	131410.81
28	64900.55	85307.50	131443.41
29	64922.68	85357.77	131476.04
30	64944.80	85408.07	131508.70

	Sinus	*Tangens*	*Secans*
60	76604.44	119175.36	155572.38
59	76585.74	119104.98	155518.48
58	76567.03	119034.65	155464.62
57	76548.32	118964.37	155410.81
56	76529.60	118894.14	155357.06
55	76510.87	118823.95	155303.35
54	76492.14	118753.82	155249.70
53	76473.40	118683.73	155196.09
52	76454.65	118613.69	155142.54
51	76435.90	118543.70	155089.04
50	76417.14	118473.76	155035.58
49	76398.37	118403.87	154982.18
48	76379.60	118334.02	154928.82
47	76360.82	118264.22	154875.52
46	76342.04	118194.47	154822.26
45	76323.25	118124.77	154769.06
44	76304.45	118055.12	154715.90
43	76285.64	117985.51	154662.80
42	76266.83	117915.95	154609.74
41	76248.01	117846.44	154556.73
40	76229.19	117776.98	154503.78
39	76210.36	117707.56	154450.87
38	76191.52	117638.20	154398.01
37	76172.68	117568.88	154345.20
36	76153.83	117499.60	154292.44
35	76134.97	117430.38	154239.73
34	76116.11	117361.20	154187.06
33	76097.24	117292.07	154134.45
32	76078.37	117222.98	154081.89
31	76059.49	117153.95	154029.37
30	76040.60	117084.96	153976.90

40	*Sinus*	*Tangens*	*Secans*
30	64944.80	85408.07	131508.70
31	64966.92	85458.39	131541.39
32	64989.03	85508.73	131574.10
33	65011.14	85559.10	131606.84
34	65033.24	85609.50	131639.61
35	65055.33	85659.92	131672.41
36	65077.42	85710.37	131705.23
37	65099.50	85760.84	131738.08
38	65121.58	85811.33	131770.96
39	65143.66	85861.85	131803.86
40	65165.72	85912.40	131836.79
41	65187.78	85962.97	131869.75
42	65209.84	86013.57	131902.74
43	65231.89	86064.19	131935.76
44	65253.94	86114.84	131968.81
45	65275.98	86165.51	132001.88
46	65298.01	86216.21	132034.98
47	65320.04	86266.93	132068.11
48	65342.06	86317.68	132101.26
49	65364.08	86368.46	132134.44
50	65386.09	86419.26	132167.65
51	65408.10	86470.09	132200.89
52	65430.10	86520.94	132234.16
53	65452.09	86571.81	132267.45
54	65474.08	86622.71	132300.77
55	65496.06	86673.64	132334.12
56	65518.04	86724.60	132367.50
57	65540.01	86775.58	132400.91
58	65561.98	86826.59	132434.35
59	65583.94	86877.62	132467.81
60	65605.90	86928.68	132501.30

	Sinus	Tangens	Secans
30	76040.60	117084.96	153976.90
29	76021.70	117016.01	153924.49
28	76002.80	116947.12	153872.12
27	75983.89	116878.27	153819.80
26	75964.98	116809.47	153767.52
25	75946.06	116740.71	153715.30
24	75927.13	116672.00	153663.12
23	75908.20	116603.34	153611.00
22	75889.26	116534.72	153558.92
21	75870.31	116466.15	153506.89
20	75851.36	116397.63	153454.91
19	75832.40	116329.16	153402.97
18	75813.43	116260.73	153351.09
17	75794.46	116192.34	153299.25
16	75775.48	116124.00	153247.46
15	75756.50	116055.71	153195.72
14	75737.51	115987.47	153144.03
13	75718.51	115919.27	153092.38
12	75699.50	115851.11	153040.78
11	75680.49	115783.01	152989.23
10	75661.47	115714.95	152937.73
9	75642.45	115646.93	152886.27
8	75623.42	115578.96	152834.87
7	75604.39	115511.04	152783.51
6	75585.35	115443.16	152732.19
5	75566.30	115375.32	152680.93
4	75547.24	115307.54	152629.71
3	75528.18	115239.79	152578.54
2	75509.11	115172.10	152527.41
1	75490.04	115104.45	152476.34
0	75470.96	115036.84	152425.31

41	Sinus	Tangens	Secans
0	65605.90	86928.68	132501.30
1	65627.85	86979.76	132534.82
2	65649.80	87030.87	132568.37
3	65671.74	87082.00	132601.94
4	65693.67	87133.16	132635.54
5	65715.60	87184.35	132669.18
6	65737.52	87235.56	132702.84
7	65759.44	87286.80	132736.53
8	65781.35	87338.06	132770.25
9	65803.26	87389.35	132803.99
10	65825.16	87440.67	132837.76
11	65847.06	87492.01	132871.56
12	65868.95	87543.38	132905.39
13	65890.83	87594.78	132939.25
14	65912.71	87646.20	132973.14
15	65934.58	87697.65	133007.06
16	65956.45	87749.12	133041.00
17	65978.31	87800.62	133074.97
18	66000.17	87852.15	133108.97
19	66022.02	87903.70	133143.00
20	66043.86	87955.28	133177.06
21	66065.70	88006.89	133211.15
22	66087.53	88058.52	133245.27
23	66109.36	88110.18	133279.42
24	66131.18	88161.86	133313.59
25	66153.00	88213.57	133347.79
26	66174.81	88265.31	133382.02
27	66196.62	88317.07	133416.28
28	66218.42	88368.86	133450.57
29	66240.22	88420.68	133484.89
30	66262.01	88472.53	133519.24

	Sinus	Tangens	Secans
60	75470.96	115036.84	152425.31
59	75451.87	114969.28	152374.33
58	75432.78	114901.76	152323.39
57	75413.68	114834.29	152272.50
56	75394.57	114766.87	152221.66
55	75375.46	114699.49	152170.87
54	75356.34	114632.15	152120.12
53	75337.21	114564.86	152069.42
52	75318.08	114497.62	152018.76
51	75298.94	114430.41	151968.15
50	75279.80	114363.26	151917.59
49	75260.65	114296.15	151867.08
48	75241.49	114229.08	151816.61
47	75222.33	114162.06	151766.19
46	75203.16	114095.08	151715.81
45	75183.98	114028.15	151665.48
44	75164.80	113961.26	151615.20
43	75145.61	113894.41	151564.96
42	75126.41	113827.61	151514.77
41	75107.21	113760.85	151464.62
40	75088.00	113694.14	151414.52
39	75068.79	113627.47	151364.47
38	75049.57	113560.85	151314.46
37	75030.34	113494.27	151264.50
36	75011.11	113427.73	151214.59
35	74991.87	113361.24	151164.72
34	74972.62	113294.79	151114.89
33	74953.37	113228.39	151065.11
32	74934.11	113162.03	151015.38
31	74914.84	113095.71	150965.69
30	74895.57	113029.44	150916.05

41	Sinus	Tangens	Secans
0	66262.01	88472.53	133519.24
1	66283.79	88524.40	133553.62
2	66305.57	88576.30	133588.03
3	66327.34	88628.22	133622.46
4	66349.11	88680.17	133656.92
5	66370.87	88732.15	133691.41
6	66392.62	88784.16	133725.94
7	66414.37	88836.20	133760.49
8	66436.11	88888.26	133795.07
9	66457.85	88940.34	133829.68
40	66479.59	88992.45	133864.32
41	66501.32	89044.59	133898.99
42	66523.04	89096.75	133933.69
43	66544.75	89148.94	133968.42
44	66566.46	89201.16	134003.17
45	66588.17	89253.41	134037.95
46	66609.87	89305.69	134072.76
47	66631.56	89357.99	134107.61
48	66653.25	89410.32	134142.48
49	66674.93	89462.68	134177.38
50	66696.61	89515.06	134212.32
51	66718.28	89567.47	134247.28
52	66739.94	89619.91	134282.27
53	66761.60	89672.38	134317.29
54	66783.26	89724.87	134352.34
55	66804.91	89777.39	134387.42
56	66826.55	89829.94	134422.53
57	66848.18	89882.52	134457.67
58	66869.81	89935.12	134492.84
59	66891.44	89987.75	134528.04
60	66913.06	90040.41	134563.27

	Sinus	Tangens	Secans
30	74895.57	113029.44	150916.05
29	74876.29	112963.21	150866.45
28	74857.01	112897.02	150816.90
27	74837.72	112830.88	150767.39
26	74818.42	112764.78	150717.93
25	74799.12	112698.72	150668.52
24	74779.81	112632.71	150619.15
23	74760.49	112566.74	150569.82
22	74741.17	112500.81	150520.54
21	74721.84	112434.93	150471.31
20	74702.51	112369.09	150422.11
19	74683.17	112303.29	150372.97
18	74663.82	112237.54	150323.87
17	74644.46	112171.83	150274.81
16	74625.10	112106.16	150225.80
15	74605.74	112040.53	150176.83
14	74586.37	111974.95	150127.91
13	74566.99	111909.41	150079.03
12	74547.60	111843.91	150030.20
11	74528.21	111778.46	149981.41
10	74508.81	111713.05	149932.67
9	74489.40	111647.68	149883.97
8	74469.99	111582.35	149835.31
7	74450.57	111517.06	149786.70
6	74431.15	111451.82	149738.13
5	74411.72	111386.62	149689.61
4	74392.29	111321.46	149641.13
3	74372.85	111256.35	149592.70
2	74353.40	111191.27	149544.30
1	74333.94	111126.24	149495.96
0	74314.48	111061.25	149447.65

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42	Sinus	Tangens	Secans
0	66913.06	90040.41	134563.27
1	66934.67	90093.09	134598.53
2	66956.28	90145.80	134633.82
3	66977.88	90198.54	134669.14
4	66999.48	90251.31	134704.49
5	67021.07	90304.11	134739.87
6	67042.66	90356.94	134775.28
7	67064.24	90409.79	134810.72
8	67085.82	90462.67	134846.19
9	67107.39	90515.58	134881.69
10	67128.95	90568.51	134917.21
11	67150.51	90621.47	134952.77
12	67172.06	90674.46	134988.36
13	67193.61	90727.48	135023.98
14	67215.15	90780.53	135059.63
15	67236.68	90833.60	135095.31
16	67258.21	90886.71	135131.02
17	67279.73	90939.84	135166.76
18	67301.25	90993.00	135202.54
19	67322.76	91046.19	135238.34
20	67344.27	91099.41	135274.17
21	67365.77	91152.65	135310.03
22	67387.27	91205.92	135345.93
23	67408.76	91259.22	135381.86
24	67430.24	91312.55	135417.81
25	67451.72	91365.91	135453.79
26	67473.19	91419.29	135489.80
27	67494.66	91472.70	135525.85
28	67516.12	91526.15	135561.93
29	67537.57	91579.62	135598.03
30	67559.02	91633.12	135634.17

	Sinus	Tangens	Secans
60	74314.48	111061.25	149447.65
59	74295.01	110996.30	149399.40
58	74275.54	110931.40	149351.18
57	74256.06	110866.53	149303.01
56	74236.57	110801.71	149254.88
55	74217.08	110736.93	149206.80
54	74197.58	110672.19	149158.75
53	74178.08	110607.50	149110.76
52	74158.57	110542.84	149062.80
51	74139.05	110478.23	149014.89
50	74119.53	110413.65	148967.03
49	74100.00	110349.12	148919.20
48	74080.46	110284.63	148871.42
47	74060.92	110220.19	148823.69
46	74041.37	110155.78	148775.99
45	74021.81	110091.41	148728.34
44	74002.25	110027.09	148680.73
43	73982.68	109962.81	148633.17
42	73963.11	109898.56	148585.65
41	73943.53	109834.36	148538.17
40	73923.94	109770.20	148490.73
39	73904.35	109706.08	148443.24
38	73884.75	109642.01	148395.99
37	73865.15	109577.97	148348.68
36	73845.54	109513.97	148301.42
35	73825.92	109450.02	148254.20
34	73806.29	109386.10	148207.02
33	73786.66	109322.23	148159.88
32	73767.02	109258.40	148112.78
31	73747.38	109194.60	148065.73
30	73727.73	109130.85	148018.72

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42	Sinus	Tangens	Secans
30	67559.02	91633.12	135634.17
31	67580.46	91686.65	135670.34
32	67601.90	91740.20	135706.54
33	67623.33	91793.79	135742.77
34	67644.76	91847.40	135779.03
35	67666.18	91901.04	135815.32
36	67687.60	91954.71	135851.64
37	67709.01	92008.41	135888.00
38	67730.41	92062.14	135924.38
39	67751.81	92115.90	135960.80
40	67773.20	92169.68	135997.25
41	67794.59	92223.50	136033.72
42	67815.97	92277.34	136070.23
43	67837.34	92331.22	136106.77
44	67858.71	92385.12	136143.34
45	67880.07	92439.05	136179.95
46	67901.43	92493.01	136216.58
47	67922.78	92547.00	136253.24
48	67944.13	92601.01	136289.94
49	67965.47	92655.06	136326.67
50	67986.81	92709.14	136363.43
51	68008.14	92763.24	136400.22
52	68029.46	92817.38	136437.04
53	68050.78	92871.54	136473.89
54	68072.09	92925.73	136510.78
55	68093.39	92979.96	136546.70
56	68114.69	93034.21	136584.64
57	68135.99	93088.49	136621.62
58	68157.28	93142.80	136658.63
59	68178.56	93197.14	136695.67
60	68199.84	93251.51	136732.75

	Sinus	Tangens	Secans
30	73727.73	109130.85	148018.72
29	73708.08	109067.14	147971.76
28	73688.42	109003.47	147924.83
27	73668.75	108939.83	147877.95
26	73649.07	108876.24	147831.11
25	73629.39	108812.69	147784.31
24	73609.71	108749.18	147737.55
23	73590.02	108685.71	147690.84
22	73570.32	108622.28	147644.17
21	73550.61	108558.89	147597.54
20	73530.90	108495.54	147550.95
19	73511.18	108432.23	147504.40
18	73491.46	108368.96	147457.90
17	73471.73	108305.73	147411.44
16	73451.99	108242.54	147365.01
15	73432.25	108179.39	147318.64
14	73412.50	108116.28	147272.30
13	73392.75	108053.21	147226.00
12	73372.99	107990.18	147179.75
11	73353.22	107927.18	147133.53
10	73333.45	107864.23	147087.36
9	73313.67	107801.32	147041.23
8	73293.88	107738.44	146995.14
7	73274.09	107675.61	146949.10
6	73254.29	107612.82	146903.09
5	73234.48	107550.06	146857.13
4	73214.67	107487.34	146811.20
3	73194.85	107424.67	146765.32
2	73175.03	107362.03	146719.48
1	73155.20	107299.43	146673.68
0	73135.37	107236.87	146627.92
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43	*Sinus*	*Tangens*	*Secans*
0	68199.84	93251.51	136732.75
1	68221.11	93305.91	136769.85
2	68242.37	93360.34	136806.99
3	68263.63	93414.79	136844.16
4	68284.88	93469.28	136881.36
5	68306.13	93523.80	136918.59
6	68327.37	93578.34	136955.86
7	68348.61	93632.92	136993.15
8	68369.84	93687.53	137030.48
9	68391.07	93742.16	137067.84
10	68412.29	93796.83	137105.23
11	68433.50	93851.52	137142.66
12	68454.71	93906.25	137180.11
13	68475.91	93961.01	137217.60
14	68497.11	94015.79	137255.12
15	68518.30	94070.61	137292.68
16	68539.48	94125.45	137330.26
17	68560.66	94180.33	137367.88
18	68581.83	94235.23	137405.53
19	68603.00	94290.17	137443.21
20	68624.16	94345.13	137480.92
21	68645.32	94400.13	137518.67
22	68666.47	94455.16	137556.45
23	68687.61	94510.21	137594.26
24	68708.75	94565.30	137632.10
25	68729.88	94620.42	137669.98
26	68751.01	94675.56	137707.89
27	68772.13	94730.74	137745.83
28	68793.24	94785.95	137783.80
29	68814.35	94841.19	137821.81
30	68835.45	94896.46	137859.85

	Sinus	*Tangens*	*Secans*
60	73135.37	107236.87	146627.92
59	73115.53	107174.35	146582.20
58	73095.68	107111.87	146536.52
57	73075.83	107049.43	146490.88
56	73055.97	106987.02	146445.29
55	73036.10	106924.66	146399.73
54	73016.23	106862.33	146354.22
53	72996.35	106800.04	146308.75
52	72976.46	106737.79	146263.31
51	72956.57	106675.58	146217.92
50	72936.67	106613.41	146172.57
49	72916.77	106551.28	146127.26
48	72896.86	106489.18	146081.98
47	72876.94	106427.13	146036.75
46	72857.02	106365.11	145991.56
45	72837.09	106303.13	145946.41
44	72817.16	106241.19	145901.30
43	72797.22	106179.29	145856.23
42	72777.27	106117.42	145811.20
41	72757.32	106055.60	145766.21
40	72737.36	105993.81	145721.27
39	72717.40	105932.06	145676.36
38	72697.43	105870.34	145631.49
37	72677.45	105808.67	145586.66
36	72657.47	105747.03	145541.87
35	72637.48	105685.44	145497.12
34	72617.48	105623.88	145452.41
33	72597.48	105562.35	145407.74
32	72577.47	105500.87	145363.11
31	72557.46	105439.42	145318.52
30	72537.44	105378.01	145273.97

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43	Sinus	Tangens	Secans
30	68835.45	94896.46	137859.85
31	68856.55	94951.76	137897.92
32	68877.64	95007.09	137936.02
33	68898.73	95062.45	137974.16
34	68919.81	95117.84	138012.33
35	68940.89	95173.26	138050.53
36	68961.96	95228.71	138088.77
37	68983.02	95284.20	138127.04
38	69004.07	95339.71	138165.34
39	69025.12	95395.26	138203.67
40	69046.17	95450.83	138242.04
41	69067.21	95506.44	138280.44
42	69088.24	95562.08	138318.87
43	69109.27	95617.74	138357.34
44	69130.29	95673.44	138395.84
45	69151.31	95729.17	138434.37
46	69172.32	95784.94	138472.94
47	69193.32	95840.73	138511.54
48	69214.32	95896.55	138550.17
49	69235.31	95952.41	138588.83
50	69256.30	96008.29	138627.53
51	69277.28	96064.21	138666.26
52	69298.25	96120.16	138705.03
53	69319.22	96176.14	138743.83
54	69340.18	96232.15	138782.66
55	69361.14	96288.19	138821.53
56	69382.09	96344.27	138860.42
57	69403.04	96400.37	138899.36
58	69423.98	96456.51	138938.32
59	69444.91	96512.68	138977.32
60	69465.84	96568.88	139016.36

	Sinus	Tangens	Secans
30	72537.44	105378.01	145273.97
29	72517.41	105316.64	145229.46
28	72497.38	105255.31	145184.98
27	72477.34	105194.01	145140.55
26	72457.29	105132.75	145096.16
25	72437.24	105071.53	145051.81
24	72417.18	105010.34	145007.49
23	72397.12	104949.20	144963.22
22	72377.05	104888.09	144918.98
21	72356.98	104827.02	144874.78
20	72336.90	104765.98	144830.63
19	72316.81	104704.98	144786.51
18	72296.71	104644.02	144742.43
17	72276.61	104583.10	144698.39
16	72256.51	104522.21	144654.39
15	72236.40	104461.36	144610.43
14	72216.28	104400.55	144566.51
13	72196.15	104339.77	144522.62
12	72176.02	104279.0[illegible]	144478.78
11	72155.88	104218.33	144434.97
10	72135.74	104157.67	144391.20
9	72115.59	104097.04	144347.48
8	72095.44	104036.45	144303.79
7	72075.28	103975.89	144260.13
6	72055.11	103915.37	144216.52
5	72034.94	103854.89	144172.95
4	72014.76	103794.45	144129.41
3	71994.57	103734.04	144085.91
2	71974.38	103673.67	144042.46
1	71954.18	103613.33	143999.04
0	71933.98	103553.03	143955.65

44	Sinus	Tangens	Secans
0	69465.84	96568.88	139016.36
1	69486.76	96625.11	139055.43
2	69507.67	96681.37	139094.53
3	69528.58	96737.67	139133.66
4	69549.49	96794.00	139172.83
5	69570.39	96850.35	139212.03
6	69591.28	96906.74	139251.27
7	69612.17	96963.16	139290.54
8	69633.05	97019.62	139329.85
9	69653.92	97076.10	139369.18
10	69674.79	97132.62	139408.56
11	69695.65	97189.17	139447.96
12	69716.51	97245.75	139487.40
13	69737.36	97302.36	139526.88
14	69758.21	97359.01	139566.39
15	69779.05	97415.69	139605.93
16	69799.88	97472.40	139645.51
17	69820.71	97529.14	139685.12
18	69841.53	97585.91	139724.77
19	69862.34	97642.72	139764.45
20	69883.15	97699.56	139804.16
21	69903.96	97756.43	139843.91
22	69924.76	97813.33	139883.69
23	69945.55	97870.27	139923.51
24	69966.33	97927.24	139963.36
25	69987.11	97984.24	140003.25
26	70007.89	98041.27	140043.17
27	70028.66	98098.33	140083.13
28	70049.42	98155.43	140123.12
29	70070.18	98212.56	140163.15
30	70090.93	98269.73	140203.21

	Sinus	Tangens	Secans
60	71933.98	103553.03	143955.65
59	71913.77	103492.77	143912.31
58	71893.55	103432.54	143869.00
57	71873.33	103372.35	143825.74
56	71853.10	103312.20	143782.51
55	71832.87	103252.08	143739.32
54	71812.63	103191.99	143696.16
53	71792.38	103131.95	143653.05
52	71772.13	103071.94	143609.97
51	71751.87	103011.96	143566.93
50	71731.61	102952.03	143523.93
49	71711.34	102892.12	143480.97
48	71691.06	102832.26	143438.05
47	71670.78	102772.43	143395.16
46	71650.49	102712.63	143352.31
45	71630.19	102652.87	143309.50
44	71609.89	102593.15	143266.72
43	71589.58	102533.46	143223.99
42	71569.27	102473.81	143181.29
41	71548.95	102414.19	143138.63
40	71528.63	102354.61	143096.00
39	71508.30	102295.06	143053.42
38	71487.96	102235.55	143010.87
37	71467.62	102176.08	142968.36
36	71447.27	102116.64	142925.88
35	71426.91	102057.23	142883.44
34	71406.55	101997.86	142841.04
33	71386.18	101938.53	142798.68
32	71365.81	101879.23	142756.36
31	71345.43	101819.97	142714.07
30	71325.05	101760.74	142671.82

44	Sinus	Tangens	Secans
30	70090.93	98269.73	140203.21
31	70111.67	98326.92	140243.30
32	70132.41	98384.15	140283.43
33	70153.14	98441.41	140323.60
34	70173.87	89498.71	140363.80
35	70194.59	98556.03	140404.03
36	70215.30	98613.39	140444.30
37	70236.01	98670.79	140484.60
38	70256.71	98728.21	140524.94
39	70277.41	98785.67	140565.32
40	70298.10	98843.16	140605.73
41	70318.79	98900.69	140646.17
42	70339.47	98958.25	140686.65
43	70360.14	99015.84	140727.17
44	70380.81	99073.46	140767.72
45	70401.47	99131.12	140808.31
46	70422.13	99188.81	140848.93
47	70442.78	99246.54	140889.58
48	70463.42	99304.29	140930.28
49	70484.06	99362.08	140971.00
50	70504.69	99419.91	141011.77
51	70525.32	99477.77	141052.56
52	70545.94	99535.66	141093.40
53	70566.55	99593.58	141134.27
54	70587.16	99651.54	141175.17
55	70607.76	99709.53	141216.11
56	70628.35	99767.56	141257.09
57	70648.94	99825.62	141298.10
58	70669.53	99883.71	141339.15
59	70690.11	99941.84	141380.24
60	70710.68	100000.00	141421.36

	Sinus	Tangens	Secans
30	71325.05	101760.74	142671.82
29	71304.66	101701.55	142629.61
28	71284.26	101642.39	142587.43
27	71263.85	101583.26	142545.29
26	71243.44	101524.17	142503.19
25	71223.02	101465.12	142461.12
24	71202.60	101406.10	142419.09
23	71182.17	101347.12	142377.10
22	71161.74	101288.17	142335.14
21	71141.30	101229.25	142293.23
20	71120.86	101170.37	142251.34
19	71100.41	101111.53	142209.50
18	71079.95	101052.72	142167.69
17	71059.48	100993.94	142125.92
16	71039.01	100935.20	142084.18
15	71018.54	100876.49	142042.48
14	70998.06	100817.82	142000.82
13	70977.57	100759.18	141959.19
12	70957.07	100700.58	141917.61
11	70936.57	100642.01	141876.05
10	70916.07	100583.47	141834.54
9	70895.56	100524.97	141793.05
8	70875.04	100466.51	141751.61
7	70854.51	100408.07	141710.20
6	70833.98	100349.68	141668.83
5	70813.45	100291.31	141627.49
4	70792.91	100232.98	141586.19
3	70772.36	100174.69	141544.93
2	70751.80	100116.42	141503.70
1	70731.24	100058.19	141462.51
0	70710.68	100000.00	141421.36

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GEOMETRIÆ TRIANGVLORVM

LIBER III.

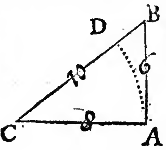
De Rectilineorum Triangulorum Calculo.

I.

CANON Triangulorum compositus, facilem rectilineorum Triangulorum Calculum suppeditat.

Hæc est tertia pars Triangulorum Geometriæ: Canonis Triangulorum compositi usum ostendens.

2. Triangulum rectilineum, est figura in planicie, tribus rectis lineis, quæ finibus suis se mutuo contingunt, conformata.



Talis est figura A B C: *est enim conformata in planicie, tribus rectis lineis* A B, A C *&* B C, *quæ finibus suis se mutuo contingunt.*

3. Triangulum rectilineum, rectangulũ est, aut obliquangulũ.

4. Triangulum rectilineum rectangulum est, quod angulum habet rectum.

Tale

Tale est in figura superiori Triangulum A B C : *habet enim angulum rectum ad* A.

5. Anguli rectilinei amplitudinem determinat comprehensus ab eo arcus, qui super vertice anguli ipsius velut centro describitur.

Sic in figura præmissa arcus A D, *descriptus centro* C, *mensurat amplitudinem anguli* B C A.

6. In Triangulo rectangulo quadratum basis est æquale quadratis laterum.

Basis Trianguli rectanguli vocatur recta linea qua angulum rectum subtendit: reliqua verò rectum ambientes, latera dicuntur. Itaque in Triangulo superiori A B C, *quadratum basis* B C, *est æquale quadratis laterum* B A *&* C A : *cujus ratio ex penultima primi element. manifesta est.*

ΠΟΡΙΣΜΑΤΑ *duo.*

Itaque lateribus trianguli rectanguli cognitis, invenitur & basis: collecta enim in unam summam laterum quadrata, componunt quadratum basis, cujus radix quadrata est ipsa basis quæsita.

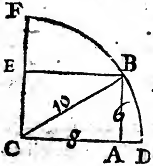
In exemplo sit latus A B 6; *& quadratum ejus* 36 : A C 8, *& quadratum* 64; *erit* B C 10. *Iuncta enim simul quadrata* 36 *&* 64, *componunt quadratum* 100 : *cujus radix quadrata est* 10, *pro* B C *basi quæsita.*

Data vero basi cum latere alterutro, manifestatur & reliquum latus: subducto enim

quadrato lateris dati, ex quadrato basis, relinquitur quadratum reliqui lateris; cujus radix quadrata est mensura lateris quæsiti.

In exemplo præmisso, deme quadratum lateris A C 64, *ex quadrato basis* B C 100 : *relinquitur quadratum lateris* A B 36; *& radix ejus* 6, *pro ipso latere, ut supra. Item deme quadratum lateris* A B 36, *ex quadrato basis* B C 100 : *residuum erit quadratum lateris* A C 64; *& radix quadrata ejus* 8, *pro ipso latere postulato.*

7. Si Trianguli rectanguli basis assumatur ut circuli radius, latera sinus recti sunt oppositorum angulorum.



Esto enim Triangulum rectangulum A B C, *in quo* B C *basis assumatur ut circuli radius. Dico* B A *esse sinum rectū anguli* B C A; *&* A C *sinū rectum anguli* A B C. *Recta enim* B A *est perpendicularis à termino arcus* B *in semidiametrum* D A C. *Itaque per 7 primi hujus, Sinus rectus est arcus* D B *vel anguli* B C A *per* 5 *hujus. Eadem ratione recta* B E, *est sinus rectus arcus* F B, *vel anguli* B C E. *Atqui per* 34 *primi*, A C *æquatur* B E; *& angulus* A B C, *æquatur angulo* B C E : *ergo* A C, *sinus est anguli* A B C *oppositi.*

ΠΟΡΙΣΜΑΤΑ *quatuor.*

Primo itaque data basi cum angulis inveniuntur latera. Nam ut radius se habet ad sinum

finum anguli; ita bafis ad latus ipfi angul oppofitum.

Exempli gratia, Sit Bafis B C *partium* 10, (*angulus* B C A *partium* 36, 52 min. 11 fec. e A B C *prioris complementi partium* 53, 7 mi 49 fec. *Sinus autem* A B 6000000, *&* A 8000000, *in ea menfura, in qua radius* B C e 10000000. *Invenientur latera* A B 6, *&* A C ! *Nam per* 19 *Septimi Euclidis*,

Vt B C 10000000, *ad* A B 6000000: *Ita* B 10, *ad* A B 6. *Item*

Vt B C 10000000, *ad* A C 8000000: *Ita* B 10, *ad* A C 8.

Secundo, data bafi cum latere alterutrc manifeftantur anguli. Bafis enim eft ad lat datum: ut radius ad finum anguli dicto lat ri oppofiti.

In eodem exemplo, detur B C 10, *&* A B 6 *Invenietur angulus* A C B *partium* 36, 52 mi 11 fec. *Nam per* 19 *Septimi Euclidis*,

Vt B C 10, *ad* A B 6: *Ita* B C 10000000, *ad* A 6000000, *finum partium* 36, 52 min. 11 fe *competentem angulo* A C B. *Itaque* A B *reliquus angulus, eft partium* 53, 7 mi 49 fec. *prioris fcilicet complementum, ut ex hujus, &* 32 *primi elementorum manifeftu eft.*

Tertio, dato latere alterutro, cum ang lis, inveftigatur latus reliquum. Sinus en anguli dato lateri oppofiti, eft ad finu complementi fui: ut latus datum, ad lat reliquum.

Detur in eodem exemplo angulus A C B *partium* 36, 52 min. 11 sec. *& sinus ejus* 6000000: A B C *partium* 53, 7 min. 49 sec. *& sinus ejus* 8000000, *cum latere* A B 6; *Dabitur* A C *reliquum latus* 8. *Nam per* 19 *Septimi Euclidis*,

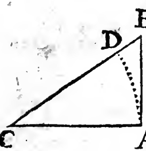
Vt A B 6000000, *ad* A C 8000000 : *Ita* A B 6, *ad* A C 8.

Quarto, datis angulis, & latere alterutro, addiscitur basis: Sinus enim anguli dato lateri oppositi, est ad radium: ut latus datum ad Basim.

Repetito & hic superiori exemplo, Detur A B 6, *& angulus ei oppositus* B C A *partium* 36, 52 min. 11 sec. *cum sinu ejus* 6000000. *Invenietur basis* B C *partium* 10. *Nam per* 19 *Septimi Euclidis*,

Vt A B 6000000, *ad* B C 10000000 : *Ita* A B 6, *ad* B C 10.

8. Si Trianguli rectanguli latus alterutrum, ex acuto angulo, fiat circuli radius; reliquum est ejusdem anguli Tangens.



Esto rectangulum Triangulum A B C, *cujus latus* A C *fiat circuli radius ex acuto angulo* C. *Dico* A B, *tangentem esse anguli* A C B, *vel arcus* A D: *est enim perpendicularis extremo semidiametri* A, *in radium* C D *per arcus terminum* D *continuatum. Itaque per* 14 *Primi*

Primi hujus, dicti anguli, vel arcus, Tangens est.

ΠΟΡΙΣΜΑΤΑ *duo.*

Primo igitur, dato latere alterutro cum angulis, invenitur reliquum latus. Radius enim eſt ad tangentem anguli lateri quæſito oppoſiti: ut latus datum ad latus reliquum.

Exempli gratia detur latus A B 6: *& angulus* A B C *part.* 53, 7 min. 49 ſec. *fiatque* A B *radius: erit* A C *Tangens anguli* A B C *ex Canone Tangentium* 13333333 *paulo plus*; *& latus* A C *reliquum* 8. *Nam per* 19 *Septimi Euclidis*,

Vt A B 10000000, *ad* A C 13333333 *paulo plus: Ita* A B 6, *ad* A C 8, *Omnino ut ſupra.*

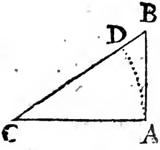
Secundo, dato utroque latere, inveſtigantur anguli. Nam ut latus alterum eſt ad latus reliquum; ita radius ad tangentem anguli reliquo lateri oppoſiti.

In exemplo detur latus A B 6: *& reliquum latus* A C 8. *Invenietur angulus* A B C *lateri* A C *oppoſiti, partium* 53, 7 min. 49 ſec. *Nam per* 19 *Septimi Euclidis*,

Vt A B 6, *ad* A C 8: *Ita* A B 10000000, *ad* A C 13333333 *paulo plus, Tangentem anguli* ABC, *oppoſiti lateri* A C; *qui ex Tangentium Canone invenitur partium* 53, 7 min. 49 ſec. *Ergo reliquus angulus* B C A *eſt partium* 36, 52 min. 11 ſec.

9. Si Trianguli rectanguli latus alterutrum eſt anguli tangens, baſis eſt anguli ejuſdem ſecans.

Repe-



Repetita præmissi Theorematis figura, Sit A B *latus; Tangens anguli* B C A. *Dico Basim* B D C *esse ejusdem anguli Secantem: est enim ducta per terminum peripheriæ* A D *in Tangentem* A B. *Itaque per* 19 *primi hujus, Secans est peripheria* A D, *vel anguli* B C A.

ΠΟΡΙΣΜΑΤΑ *tria.*

Primo ergo, dato latere alterutro, cum angulis, manifestatur basis. Radius enim est ad secantem anguli dati: ut latus eidem angulo adjacens ad Basim.

Exempli loco detur latus A C 8; *& angulus* B C A *Dato lateri adjacens, partium* 36, 52 min. 11 sec. *secans ejus* 12500000, *erit Basis* B C 10. *Nam per* 19 *Septimi Euclidis*,

Vt A C 10000000, *ad* B C 12500000: *Ita* A C 8, *ad* B C 10.

Secundo, dato latere alterutro & Basi, exquiruntur anguli. Nam ut latus alterutrum ad Basim: ita radius est ad secantem anguli lateri dato adjacentis.

In exemplo eodem, detur latus A C 8, *& basis* B C 10: *erit angulus* B C A *partium* 36, 52 min. 11 sec. *Nam per* 19 *Septimi Euclidis*,

Vt A C 8, *ad* B C 10: *Ita* A C 10000000, *ad* B C 12500000, *Secantem anguli* B C A, *lateri*

teri dato A C *adjacentis. Inveniturque ex Canone secantium partium* 36, 52 min. 11 sec. *ergo reliquus* A B C, *est partium* 53, 7 min. 49 sec.

Tertio datis angulis & Basi, inveniuntur latera. Nam secans anguli dati est ad radium : ut basis ad latus dato angulo adjacens.

Sit iterum exempli loco angulus B C A *partium* 36, 52 min. 11 sec. *& Secans ejus è Canone Secantium* 12500000 : *Basis* B C 10; *erit* A C *latus angulo dato adjacens* 8. *Nam per* 19 *Septimi Euclidis*;

Vt B C 12500000, *ad* A C 10000000 : *Ita* B C 10, *ad* A C 8.

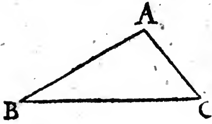
Rursus detur Secans anguli A B C *partium* 53, 7 min. 49 sec. 16666666 : *& basis* B C 10; *erit* A B 6. *Nam per* 19 *Septimi Euclidis*,

Vt B C 16666666, *ad* A B 10000000 : *Ita* B C 10, *ad* A B 6.

Et sic Triangulorum Rectangulorum Calculum absolvimus. Sequitur

Obliquangulorum Triangulorum Calculus.

10. Triangulum rectilineum obliquangulum est, cujus tres anguli obliqui sunt.



Tale est in adjuncto schemate triangulum ABC, *ejus enim anguli omnes obliqui sunt.*

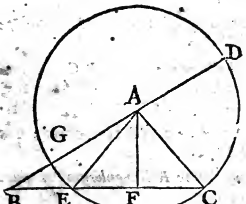
11. Obli-

11. Obliquus angulus est qui acutus est aut obtusus.

12. Acutus angulus est qui recto minor est: obtusus qui recto major.

Ita in superiori figura angulus ad B *&* C *est acutus, est enim uterque recto minor: angulus vero ad* A *obtusus est, quia recto major est.*

13. Si trianguli obliquanguli latus minus fiat circuli radius, & ex ejus angulari puncto describatur circulus, basin & latus majus secans; erit basis ad summam laterum, ut segmentum lateris ad segmentum basis.



Basis trianguli obliquanguli vocatur latus majus: vel, si aequicrurum sit, alterutrum crurum pro basi assumptum. Sit ergo A B C *Triangulum obliquangulum, cujus latus minus* A C, *basis* B C*: facto autem* A C *radio, ex* A *puncto angulari, describatur circuli peripheria, secans basim in* E, *reliquum latus in* G. *Dico basim* B C, *esse ad summam laterum* B A *&* A C *vel* A D *(*A C *enim &* A D *radii sunt, & proinde aequales per* 15 *Definitionem primi elementorum) ut* B G *lateris segmentum, ad* B E *segmentum*

Ba-

Basis. Recta enim B D *&* B C *à* B *puncto extra circulum productæ secant circulum in* G *&* E. *Itaque per* 36 *Tertii elementorum, ut* B C *ad* B D *: Ita* B G *ad* B E. *quod erat demonstrandum.*

ΠΟΡΙΣΜΑ.

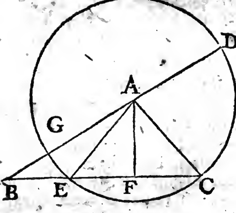
Itaque tribus obliquanguli Trianguli lateribus datis, inveniuntur tres anguli. Nam ut basis trianguli ad summam laterum, ita laterum differentia ad basis segmentum: sed ut basis segmentum cum semisse residui, est ad latus majus; ita radius ad secantem anguli lateri minori adjacentis. Item ut semissis residui, est ad latus minus: ita radius ad secantem anguli lateri minori adjacentis. Dantur ergo duo anguli: quibus ex semicirculo subductis, relinquitur tertius basi oppositus.

Retenta præcedentis Trianguli figura sit basis B C 28. *Latera vero* B A 25, A C 17 *: & eorum summa* B D 42 *; Differentia* B G 8 *: erit* B E *segmentum Basis* 12. *Nam*,

Vt B C 28, *ad* B D 42 *: Ita* B G 8, *ad* B E 12.

Subductum vero segmentum B E 12, *ex basi* B C 28 *: relinquit* E C 16 *; cujus semissis* E F *vel* F C *est* 8 *(Perpendicularis enim* A F *bisecat* E C *per tertiam tertii elementorum) hinc dantur anguli ad* B *&* C *per* 8 *hujus. Nam* B E *est* 12, *&* E F 8 *: ergo tota* B F 20. *Basis autem* B A *Trianguli rectanguli* B F A *est* 25. *Itaque*

Vt B F 20, *ad* B A 25 *: Ita* B F 10000000, *ad* B A 12500000, *secantem anguli ad* B *partium* 36,



36, 52 min. 11 sec. *Rursus in Triangulo* A F C *rectangulo datur latus* F C 8, & *basis* A C 17: *ergo*

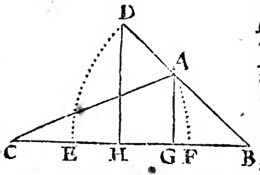
Vt F C 8, *ad* A C 17: *Ita* F C 10000000, *ad* A C 21250000, *secantem anguli ad* C *partium* 61, 55 min. 39 sec.

Iam cum anguli ad C & B *noti sint, non potest latere reliquus ad* A: *est enim residuus duorum ad semicirculum, per* 32 *primi elementorum. Dempto igitur utroque ex semicirculi partibus* 180: *relinquitur ipse angulus quæsitus, partium* 81, 12 min. 10 sec.

Atque ita ex tribus obliquanguli Trianguli lateribus datis, tres anguli inventi sunt: quod erat ostendendum.

14. In Triangulo obliquangulo proportio lateris ad latus est: ut proportio sinus recti anguli alteri lateri oppositi, ad sinum rectum anguli reliquo lateri oppositi; & contra.

Sit Triangulum A B C *obliquangulum, laterum inæqualium (nam si latera æqualia sint, anguli oppositi per* 5 *primi elementorum æquantur: itaque*



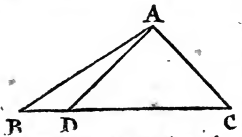
itaque & sinus eorum aequales sunt per 29 tertii Elementorum, Dico B A *latus esse, ad* A C *latus: ut sinus rectus anguli* A C B, *ad sinum rectum angu* A B C. *Continuetur enim* B A *latus in* D, *ut aqua le sit lateri* A C: *descriptisque peripheriis* D & A F *aequalibus radiis* C A & B D, *dimittan tur ex* D & A *arcuum terminis perpendiculare in basim* B C; *sintque* D H & A G *sinus recti sc licet angulorum* C & B, *vel arcuum* A F & D *per 7 primi hujus. Erit per 4 sexti elementorum ut* B A *ad* B D, *hoc est* A C: *Ita* A G *sinus recti anguli oppositi, ad* D H *sinum rectum anguli op positi: quod erat demonstrandum. Conversa huji Theorematis eodem modo demonstratur. Nam qu* B A *latus unum est ad* B D *latus alterum:* A G *sinus angulo* C *oppositi, ad* D H *sinum angu oppositi; est etiam, per elementum citatum,* A *sinus anguli* C, *ad* D H *sinum anguli* B; *ut oppo tum latus* A B, *ad oppositum latus* D H, *id est* B C. *Quod etiam demonstrandum erat. Observ autem hoc Theorema verum esse non modo in omn bus rectilineis Triangulis, sed & Sphaericis.*

ΠΟΡΙΣΜΑΤΑ *tria.*

Itaque datis duobus obliquanguli Trian guli lateribus, & angulo non ab iis compre

N hen

henso obtuso (aut si acuto data anguli specie alteri lateri oppositi) anguli reliqui, & latus tertium invenitur. Nam ut latus alterutrum dato angulo oppositum est ad sinum anguli dati: ita latus alterum, ad sinum anguli oppositi. Dantur ergo duo anguli; quibus ex semicirculo ablatis, relinquitur tertius. quare ut sinus anguli alterutrius noti, ad alterutrum latus oppositum; ita sinus anguli tertii, ad latus tertium.



Detur in Triangulo A B C *obliquangulo, latus* A B 25; A C 17: *&* *angulus* ABC *non ab iis comprehensus acutus partium* 36,52 min. 11 sec. *cum acuta specie anguli ad* C *ignoti. Invenietur ipse angulus ad* C *partium* 61, 55 min. 39 sec. *Nam per* 19 *Septimi Euclidis*,

Ut latus A C 17, *ad sinum anguli* A B C 6000000: *Ita* A B *latus* 25, *ad sinum anguli* A C B 8823529.

Cujus arcus è sinuum Canone datur partium 61, 55 min. 39 sec. *quia species anguli acuta est: nam si obtusa esset, angulus existeret partium* 118, 4 min. 21 sec. *Quod ut manifestum fiat, ducatur ex* A *recta* A D *in basin* B C, *aequalis* A C: *erit* A D C *Triangulum aequicrurum*, *&* *angulus* A D C *per* 5 *primi elementorum aequalis angulo* A C D; *exterior autem* A D B *per* 13 *ejusdem, erit reliquus ad semicirculum. Quare ut latus* B A *subten-*

subtendit duplicem angulum, A D B *obtusum*, & A C B *acutum: Ita etiam sinus inventus, per* 7 *primi hujus est duarum peripheriarum, minoris circuli quadrante, & reliquæ ad semiperipheriam. Patet igitur definiendam esse anguli speciem dato angulo acuto existente. Alia vero est ratio, cum angulus obtusus datur: nam tum manifestum est, reliquos Trianguli angulos acutos esse. Duo enim obtusi anguli in Triangulo plano esse nequeunt, cum omnes Trianguli anguli per* 32 *primi elementorum æquales sint duobus rectis. Itaque species anguli tunc per se data est, nempe acuta.*

Porro cum in Triangulo A B C *duo anguli noti sint*, A B C & A C B, *non potest latere tertius* B A C: *est enim per* 32 *primi elementorum, residuus duorum datorum ad semicirculum, partium scilicet* 81, 12 min. 10 sec. *Itaque tertium latus inde innotescit. Nam*

Vt sinus anguli A B C 6000000, *ad latus* A C 17: *Ita sinus anguli* B A C 9882353, *ad latus* B C 28. *vel*,

Vt sinus anguli A C B 8823529, *ad latus* A B 25: *Ita sinus anguli* B A C 9882353, *ad latus* B C 28.

Secundo, datis duobus Trianguli obliquanguli angulis, & uno latere, manifestatur angulus tertius, cum reliquis lateribus. Subductis enim duobus angulis datis ex semicirculo, relinquitur tertius. quare ut se habet sinus anguli lateri dato oppositi ad latus datum: ita etiam reliquorum angulorum sinus ad latera opposita.

Sit & hic Triangulum obliquangulum A B C,

 cujus

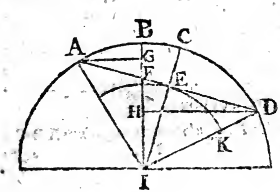
cujus duo anguli A B C 36, 52 min. 11 sec. *&* A C B 61, 55 min. 39 sec. *dentur; cum latere* B C 28. *Invenietur reliquus angulus* B A C, *cum lateribus* B A *&* A C. *Demptis enim angulis datis ex semicirculo, relinquitur angulus tertius* B A C, *partium* 81, 12 min. 10 sec. *Itaque per* 19 *septimi Euclidis*,

Vt sinus anguli B A C 9882352, *ad latus* B C 28: *Ita sinus anguli* A B C 6000000, *ad latus* A C 17. *Item*

Vt sinus anguli B A C 9882352, *ad latus* B C 28: *Ita sinus anguli* A C B 8823529, *ad latus* A B 25. *vel*

Vt sinus anguli A B C 6000000, *ad latus* A C 17: *Ita sinus anguli* A C B 8823529, *ad latus* A B 25.

15. Si angulorum duorum summa detur, quorum sinuum ratio inter se constet, ipsi etiam anguli secernuntur. Nam ut semissis summæ sinuum rationis, ad differentiam semissis, & termini rationis sinuum alterutrius est: ita tangens summæ angulorum, ad tangentem anguli; quo minor quæsitus ab angulorum summæ semisse deficit; major eam superat.



Detur in adjecto diagrammate, summa angulorum A I B *&* BID

part. 40 : *cum ratione sinuum ut* A G *ad* D H (*vel per* 4 *sexti elementorum vt* A F *ad* D F) *ut* 4 *ad* 7. *Dico utrumque angulum* A I B *&* B I D *sigillatim datum iri. Egrediatur enim ex* I *recta, bisecans* A D, *rationis sinuum summam datam in* E : *erit* A E 5 & med. *&* *angulus* A I E *partium* 20, *æqualis angulo* D I E ; F E *vero* (*differentia termini minoris* A F 4, *&* A E 5 & med. *vel* E D 5 & med. *&* F D *termini majoris* 7) 1 & med. *Fiat quoque* I E *radius, ut* D E *tangens sit anguli* D I E, *vel arcus* K E *partium* 20: *hinc enim dabitur tangens* E F *angulum* E I F *vel* B I C *subtendens. Nam per* 19 *septimi Euclidis,*

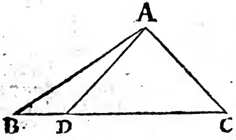
Vt D E 5 & med. *ad* D E *tangentem ang.* D I B 3639702 : *Ita* F E 1 & med. *ad* F E *tang. anguli* E I F, 992646.

Cujus arcus è Tangentium Canone datur partium 5, 40 min. 8 sec. *fere. Atqui hoc angulo major est angulus* B I D *major : minor vero angulus* A I B *minor. Ergo* B I D *angulus est partium* 25, 40 min. 8 sec. *fere* : A I B *partium* 14, 19 min. 52 sec. *Quod erat demonstrandum.*

ΠΟΡΙΣΜΑ.

Itaque duobus obliquanguli Trianguli lateribus datis, & angulo ab iis comprehenso, inveniuntur anguli reliqui, & latus tertium. Nam ut semissis summæ laterum datorum, ad differentiam summæ semissis, & lateris alterutrius : Sic tangens semissis residui anguli ad semicirculum, ad Tangentem anguli, quo angulus minori lateri oppositus eâdem semisse minor, majori major est. Dantur ergo tres anguli. Quare, ut sinus alterutrius

anguli, ad latus oppositum: ita sinus anguli quæsito oppositi, ad latus quæsitum.



Retenta superioris Trianguli figura, sit latus AB 25; BC 28: *& angulus* ABC *partium* 36, 52 min. 11 sec. *Invenientur reliqui anguli* BAC *&* ACB *cum tertio latere* AC. *Nam per* 32 *primi elementorum, ex angulo* B *noto, datur summa angulorum* BAC *&* ACB, *partium* 143, 7 min. 48 sec. *residuum scilicet anguli dati ad semicirculum: item ex lateribus notis, datur ratio sinuum angulorum oppositorum per* 13 *hujus. Itaque cum angulorum duorum summa detur, cum ratione sinuum etiam uterque sigillatim definitur. Nam*

Vt semissis summæ laterum 26 & med.	*ad differentiam summæ semissu & lateris alterutrius* 1 & med.
Sic Tangens semissis residui anguli, ad semicirculum partium 71, 33 min. 54 sec. *scilicet* 30000000.	*ad Tangentem* 1698112, *anguli partium* 9, 38 min. 15 sec. *quo angulus* ACB *minori lateri oppositus semisse residui anguli ad semicirculum minor est: reliquus* BAC *majori lateri oppositus major est. Itaque* ACB *est partium* 61, 55 min. 39 sec. BAC 81, 11 min. 9 sec. *ut supra.*

Latus

Latus A C *ex præmisso Theoremate invenit* 17. *Nam*

Vt sinus anguli B A C 9882352 *ad* B C *oppo-situm latus* 28: *Ita sinus anguli* A B C 600000 *ad* A C *latus oppositum* 17.

Et sic calculum rectilineorum Triangulorum ex-posuimus, cujus usus est in omni magnitudinu genere dimetiendo. Superest tantum ut in eo Ma-thematum studiosus sedulo se exerceat. Theorema-ta enim sunt pro inventione cujusvis quarti in Triangulo rectilineo datis tribus, idque per 19 *se-ptimi Euclidis, .i. regulam proportionum.*

Etsi vero superior doctrina tam clare proposi-sit, ut ulterius explicari non sit opus: quo tam promptior & expeditior sit ejus usus, subjungim. sequentem diatyposim, in qua tanquam in tabu doctrinæ superioris summam exhibemus.

IN TRIANGVLO RECTANGVLO

inveniuntur

LATERA

Ex basi & angulis, *per 7 hujus.*

I	II
Vt radius,	*ad sinum anguli quæsito lateri oppositi.*
III	IIII
Ita Basis,	*ad latus quæsitum.*

vel per 9 hujus.

I	II
Vt secans anguli quæsito lateri adjacens	*ad Radium.*
III	IIII
Ita basis,	*ad latus quæsitum.*

Ex angulis & latere alterutro, *per 7 hujus.*

I	II
Vt sinus anguli dato lateri oppositi	*ad sinum complementi sui*
III	IIII
Ita datum latus,	*ad latus reliquum.*

vel per 8 hujus.

I	II
Vt radius	*ad Tangentem anguli dato lateri oppositi*
III	IIII
Ita datum latus,	*ad latus reliquum.*

Ex

Ex basi & latere alterutro, *per 6 hujus.*

Minus quadratum lateris noti ex quadrato bas relinquitur quadratum lateris reliqui: cujus tetr gonica radix est pro ipso latere quæsito.

B A S I S

Ex utroque latere, *per 6 hujus.*

Adde in unam summam quadrata laterun componitur quadratum Basis : cujus radix qu drata ipsam Basim manifestat.

Ex angulis & alterutro latere, *per 7 hujus*

I		II
Vt sinus anguli dato lateri oppositi	}	*ad radium*
III		IIII
Ita datum latus,		*ad basim.*

vel per 9 hujus;

I		II
Vt radius	}	*ad secantem anguli dato lat adjacentis*
III		IIII
Ita datum latus,		*ad basim.*

A N G V L I

Ex basi & latere alterutro, *per 7 hujus.*

I		II
Vt basis	}	*ad latus datum*

III		IIII
a radius	}	*ad sinum anguli dato lateri oppositi.*

vel per 9 *hujus,*

I		II
t latus datum	}	*ad basim*

III		IIII
a radius	}	*ad secantem anguli dato lateri adjacentis.*

Ex utroque crure, *per* 8 *hujus.*

I		II
t latus	}	*ad latus reliquum*

III		IIII
a radius	}	*ad Tangentem anguli reliqua lateri oppositi.*

N TRIANGVLO
OBLIQVANGVLO

inveniuntur

ANGVLI

Ex tribus lateribus, *per* 13 *hujus.*

I		II
t basis Trianguli	}	*ad summam laterum*

Ita

III		IIII
Ita laterum differentia	}	*ad basis segmentum.*

Vt Basis segmentum cum semisse residui	}	*ad latus majus*
Ita radius	}	*ad secantem anguli lateri majo adjacentis.*
Vt semissis residui	}	*ad latus minus*
Ita radius	}	*ad secantem anguli lateri mino adjacentis.*

Dantur jam duo anguli : Tertius est horu duorum residuus ad semicirculum.

LATVS ET ANGVLI DVC

Ex duobus lateribus datis, & uno angul obtuso non ab iis comprehenso : vel si acut data specie alterutrius anguli ignoti, *per* I *hujus.*

I		II
Vt latus datum dato angulo oppositum	}	*ad sinum anguli dati*
III		
Ita latus alterum	}	*ad sinum anguli oppositi mino quadrante, si species angu acuta sit, majoris si obtusa*

Dantur jam duo anguli : Tertius est horu duorum residuus ad semicirculum.

Vt sinus anguli alterutrius noti	}	*ad latus oppositum*

It

ſinus anguli ertii } ad latus tertium.

ANGVLVS ET DVO LATERA

duobus angulis & uno latere, *per eandem.*

Tertius angulus eſt reliquus duorum datorum ad icirculum. Itaque,

I		II
inus anguli dato lateri ppoſiti	}	*ad latus datum*
III		
ſinus anguli ecundi	}	*ad latus oppoſitum.*
ſinus anguli alteru- trius	}	*ad ſuum latus oppoſi- tum*
ſinus anguli ertii	}	*ad latus tertium.*

ANGVLI DVO ET LATVS

duobus lateribus & angulo ab iis comprehenſo, *per* 15 *hujus.*

I		II
ſemiſſis ſumma aterum data	}	*ad differentiam ſumma ſemiſſis & lateris alterutrius:*
III		
Tangens ſemiſſis reſidui anguli ad ſemicirculum	}	*ad Tangentem anguli, quo angulus lateri minori oppoſitus ſemiſſe dicti reſidui anguli ad ſemicirculum minor eſt: oppoſitus majori major eſt.*

Vt an-

I		II
Vt anguli alterutrius sinus	}	*ad latus oppositum*
III		IIII
Ita sinus anguli quaesito lateri oppositi	}	*ad latus quae[...] tum.*

NOTA.

Post impressionem harum tabu[...]
larum diligentissime attentissime[...]
easdem relegimus, & cum emen[...]
dato exemplari contulimus, ne[...]
vel unicum in iis mendum inv[...]
nimus. Poterunt itaque utentes h[...]
tuto acquiescere.

BIBLIOTECA NA[...] ROMA

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